# TWENTY-FOURTH CATALOGUE

OF THE

# ...ARKANSAS...
# INDUSTRIAL UNIVERSITY

FAYETTEVILLE,
WASHINGTON COUNTY, ARKANSAS.

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MEDICAL AND LAW SCHOOLS AT LITTLE ROCK.
BRANCH NORMAL COLLEGE AT PINE BLUFF.

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1896-97.

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ANNOUNCEMENTS FOR 1897-98.

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1897.
ARKANSAS DEMOCRAT COMPANY, PRINTERS AND PUBLISHERS.
LITTLE ROCK, ARK.

UNIVERSITY HALL—Main Building.

# 1897

## JANUARY.

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# 1898

## JANUARY

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## FEBRUARY

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## MARCH

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## APRIL

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## JUNE

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# CALENDAR, 1897-98.

## FAYETTEVILLE.

### 1897.

SEPTEMBER 14—First term begins.
SEPTEMBER 14-17—Entrance examinations.
NOVEMBER 25—Thanksgiving, a holiday.

### 1898.

JANUARY 21—First term examinations begin.
JANUARY 29—First term ends.
JANUARY 31—Second term begins.
MAY 30—Decoration day, a holiday.
JUNE 2—Second term examinations begin.
JUNE 3—Decoration day, a holiday.
JUNE 12—Baccalaureate sermon.
JUNE 16—Annual commencement.

## MEDICAL DEPARTMENT, LITTLE ROCK.

### 1897.

OCTOBER 1—Preliminary course begins.
NOVEMBER 2—Regular session begins.

### 1898.

APRIL 30—Session ends.

## LAW DEPARTMENT, LITTLE ROCK.

### 1897.

OCTOBER 1—Fall term begins.
JANUARY 31—Fall term ends.

### 1898.

FEBRUARY 1—Spring term begins.
JUNE 1—Spring term ends.

## BRANCH NORMAL COLLEGE, PINE BLUFF.

### 1897.

SEPTEMBER 7—Session begins.

### 1898.

JUNE 5—Session ends.

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LORENZO ELLIS,
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Horticulturist.

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Assistant Chemist.

GEORGE B. IRBY, B. A.,
Assistant Agriculturist at Newport.

C. L. NEWMAN, B. S.,
Assistant Agriculturist at Camden.

# THE UNIVERSITY AND THE STATE.

The University is at the head of the public educational system of the State of Arkansas. It seeks to foster the higher educational interests of the State, broadly and generously interpreted, and to make provision for the demands of advanced scholarship in as many lines as its means will permit. It is the aim of its Faculty and Board of Trustees, from year to year, to bring it into still closer articulation with the public schools of the State, and in connection with them to afford to all the youth of either sex ample facilities for liberal education in literature, science and the industrial arts, and for the professional studies.

Through the aid received from the United States and from the State of Arkansas, the University is enabled to offer free tuition, except in the studies of Law, Medicine, Music, and Art and thus to open wide her doors to all seekers of learning.

The institution was established in accordance with an act of Congress making a grant of land for its benefit, and in accordance with an act of the General Assembly of this State carrying out the object of said grant.

## LOCATION.

The University, except its Medical and Law Schools and Branch Normal College, is located at Fayetteville, Washington County, in northwestern Arkansas. It is therefore situated in the heart of the Ozark Mountains, and is more than 1,500 feet

above the sea level. The location is thought to be unsurpassed in salubrity of climate, beauty of surrounding scenery, variety and perfection of agricultural and horticultural productions, and in the morality and intelligence of its people.

Students may reach Fayetteville from both the north and the south by the Texas branch of the St. Louis and San Francisco Railroad, now running three trains daily each way, and connecting on the south with the Little Rock and Fort Smith Railroad at Van Buren.

## BUILDINGS.

### UNIVERSITY HALL.

This is a brick structure with cut stone trimmings and a stone foundation. It is four stories in height above the basement. It consists of a front building 214 feet in length and two wings, each 124 feet in depth, the whole forming three sides of a quadrangle. This building contains a large number of class rooms, Chapel, Library and Reading Room, separate Study Halls for the boys and girls of the Preparatory Department, Armory, Magazine, Band Room, Laboratories for Engineering, Biology and Geology, Music and Art Rooms, President's and Commandant's Offices, Natural History Museum, Examination Hall, Literary Society Halls, etc., in all seventy rooms, together with broad corridors and stairways. The building is heated mainly by steam, lighted by electricity, and supplied with water from the city waterworks.

## SCIENCE HALL.

This building, designed especially for the departments of Chemistry and Physics, was erected in 1893; it is a substantial two-story brick building, 50x60 feet. On the first floor are the lecture rooms of the two departments, the physical laboratory and storeroom, and also the private laboratory of the professor in charge. On the second floor are the chemical laboratories, including a laboratory for general chemistry, a laboratory for qualitative analysis, and a laboratory devoted to quantitative analysis, also a storeroom for chemical supplies, a weighing room and a hallway. The building is supplied with gas and water and with the best modern appliances for technical work. It will accommodate about 100 students.

## DORMITORIES.

The North Dormitory is a two-story frame building. It contains a dining hall, kitchens, storerooms, and on the second floor a number of rooms for students.

The South Dormitory is a substantial and handsome brick building, three stories high and containing over forty rooms. It is favorably located with a view to the health of the occupants, convenience of access to University Hall, and sightliness of appearance on the grounds. The rooms are large, well ventilated and lighted, and open into broad corridors extending lengthwise through the building. From a wide veranda in front there are three entrances to the building. There are also two rear entrances, and on the third floor a suite of rooms fitted up for an in-

firmary. Through the generosity of the ladies of Fayetteville, this suite of rooms has during the past year been thoroughly equipped.

### AGRICULTURAL BUILDINGS.

The building of the Agricultural Experiment Station is of brick, one story in height. It contains the office of the Director; the laboratories of the Chemist, Horticulturist and Veterinarian; the museum, and several commodious storerooms. Belonging to the Department of Agriculture are a large barn, stock shed, dairy house, fruit house and other necessary outbuildings.

### THE SHOPS.

The old shop building, erected in 1889, was totally destroyed by fire on the night of April 4, 1895. The machinery, excepting the boilers, was almost a total loss. Plans for a new building were at once begun, and before the year closed the new building was completed. It is of brick with stone foundation and iron roof, with a floor space of 8,000 square feet, whereas the old building contained but 7,600 square feet. The building provides a wood room 80x40, a foundry 35x40, forge shops 32x40, machine shop 40x48, and boiler room 32x35. Besides the main building there is a brick building 15x35, divided into two rooms, without communication, one of which is for office purposes, and the other for the storage of oil and paint; also a frame coal bin 12x30, covered with iron and accessible to teams from either side. The new buildings are heated by steam and provided with water from the city waterworks and

with fire hose. When fully equipped they will accommodate about 100 students in class work at one time. The grading for foundations and the larger part of the woodwork and painting were done by students.

## LIBRARY.

The Library occupies the north wing of the main building, second floor. It now contains over 7,000 volumes, with numerous pamphlets, maps, charts, etc. Shelves are provided for 14,000 volumes, with room for expansion.

The alcoves are separated from the library hall by an iron railing; and only advanced students are permitted to have direct access to the shelves. The general reference works, however, are outside the railing.

The Dewey decimal system of classification and the Cutter book-numbers are used, thereby simplifying the circulation of books and the general care of the Library.

The Reading Room contains, on Athenæum newspaper files, nearly all the papers published in Arkansas, and also the St. Louis and Memphis dailies.

The leading high-class periodicals (including magazines, reviews and various technical monthlies) are regularly taken, and are bound as they accumulate. This vast fund of current literature is rendered more useful and accessible by "Poole's Complete Index" to periodic literature from 1802 to the present time.

Among the works of general reference in the Library are all the best encyclopedias and dictionaries.

The card catalogue in preparation will greatly facilitate reference and will also greatly increase the usefulness and popularity of the Library.

The privileges of both Library and Reading Room are free to all students.

There is also a Special Library of 330 volumes belonging to the department of English and Modern Languages, and another of 600 volumes belonging to the Geological Department.

## THE ARMORY.

The Armory is a large, well lighted room, 60x80 feet, situated in the basement of the north wing of the main building. It is substantially fitted up with arm racks, compartments for equipments, and all other necessary conveniences. Two other rooms are fitted up for the use of the Military Department, and are used as band room and storeroom.

The equipment of the department consists of 275 Springfield Cadet Rifles, of the same model as those used at the United States Military Academy at West Point, 275 sets of infantry equipments, twenty-one cadet swords, West Point pattern, National colors, flags, signal equipment, tents, ammunition, etc., and a superior set of band instruments.

The arms and equipments are furnished the University by the general government, and the tents are loaned the department by the State. The other equipments have been purchased by the University

and belong to the Military Department. The equipment is sufficient for a battalion of 350 cadets.

## THE MUSEUMS.

The University has two Museums, which are of great value in furnishing materials for the illustration of scientific studies and of the industrial arts.

### MUSEUM OF NATURAL HISTORY.

The Museum occupies the fourth floor of the north wing of the main building. The collections in the Museum at present comprise the following:

200 birds and mammals, 80 species.
200 reptiles and amphibians, 40 species.
1,500 fishes, 350 species.
1,000 insects and other invertebrates, 200 species.
18 skeletons.
3,500 plants, 1,500 species.
1,500 fossils, 230 species.
400 minerals, 200 species.
150 specimens of rocks, representing about 100 varieties of building and ornamental stones.

A few archaeological specimens, also a few anatomical and physiological preparations.

Except fishes, invertebrates, minerals and fossils, most of our collections are from Arkansas.

Major Earle has deposited in the Museum his large collection of minerals, fossils, war curios, etc. This collection was formerly deposited in Cane Hill College.

Our aim is to make the Museum of more practical and educational value, and to this end we invite

the coöperation of the people of the State in adding to our collections in one or more directions indicated below:

1. An exhibition of valuable rock materials used in construction, architecture, and the arts.

2. An exhibition of native ores, with specimens illustrating the metallurgy of useful metals.

3. Collections of plants and animals of the country, including fossil species.

4. Historical and archæological collections.

The Museum will gratefully acknowledge donations of various objects, and the donors may be sure that anything of value sent to it will be carefully preserved and duly credited to the donor. Collections in the hands of private parties are likely to be soon scattered or spoiled through improper care and handling. The Museum is now prepared to receive collections on deposit, and to preserve and display them under the owner's name until called for. In this way owners of interesting collections are usually much more certain of having their collections permanently preserved, and the collections will be seen by more people and become more useful.

Through the kindness of the St. Louis and San Francisco and the Eureka Springs Railways the curator has been much aided in making collections in Northwestern Arkansas.

While our Museum is most important on account of its educational value, at the same time it serves as an important purpose in representing the resources of this State. Any donations or aid in making collections for the Museum will be highly appreciated.

### INDUSTRIAL MUSEUM.

Among the facilities for instruction contained in the equipment of the University, may be mentioned:

A Dean steam pump with air chamber, water and steam cylinders, and valve chambers sectioned, so that a student may see the working parts.

A Cameron steam pump with the steam cylinder sectioned.

A Blake steam pump in full working order.

Two small horizontal and one vertical steam engine made by the students in the shop.

A fire hydrant in working order.

A set of three successive portions of plate from a boiler showing effect of scale in producing overheating and bagging.

Samples of articles of manufacture form a large part of the collection, and are found to be of great service in acquainting students with the construction of such articles. Among these may be mentioned link belting, steampipe covering, grease cups, injectors in sections, water meters, insulated wire, lead cables, and lubricating oils. Models of a large number of machines of various kinds are also in the collection.

## THE LABORATORIES.

In the laboratories of the University opportunities are afforded for practical instruction in Chemistry, Mineralogy, Physics, Botany, Zoölogy, Entomology, Horticulture, and in Civil, Mechanical, and Electrical Engineering.

## CHEMICAL LABORATORIES.

The laboratories for chemical work are four in number and are situated in Science Hall. The Laboratory of General Chemistry is furnished with desks capable of accommodating thirty-five students. Each desk has a cupboard and two drawers, and is provided with gas and water. The Qualitative Laboratory has desks for sixteen students. Each desk is provided with suitable conveniences for taking care of apparatus and is supplied with all the common reagents. The room is provided with a hood and other equipments usually found in qualitative laboratories. The Quantitative Laboratory has suitable accommodations for eight students and, beside the usual equipments, a Blake ore crusher and an assay furnace. Adjoining the Quantitative Laboratory is the weighing room, which contains two of Becker's best analytical balances, besides a number of less accurate instruments suitable for weighing large quantities of chemicals. The storeroom contains all the apparatus and chemicals. The room is in charge of an assistant, who gives out the supplies and keeps the books. This room contains the apparatus for preparing distilled water and has also some space for laboratory work.

## PHYSICAL LABORATORY.

The Physical Laboratory is a room 20x40 feet and is provided with large tables suitable for use in performing experiments in General Physics and physical measurements. It has also two pillars built up from the ground and independent of the rest of the

building for the accommodation of delicate instruments which would otherwise be disturbed by the vibrations of the floor. The storeroom of physical apparatus is supplied with instruments suitable for illustrating the principles of Physics and for the use of students in practical work.

BIOLOGICAL LABORATORY.

The Biological Laboratory will accommodate about fifty students. It is well equipped with microscopes, microtomes, micro-chemical reagents, and the special apparatus for bacteriological work. A large aquarium furnishes means for the preservation of living animals for classes in Zoölogy. All the apparatus necessary for the collection, mounting, and preservation of plants and insects is supplied in abundance. Each table is fitted with gas and distilled water, and each student is supplied with all the chemicals and apparatus needed in botanical and zoölogical dissections, and in the hardening, sectioning, staining and mounting of material for histological work. Within the last year a thoroughly equipped dark-room for photographic and microphotographic work, an entomological laboratory for advanced students, and a complete set of anthropometric apparatus have greatly increased the facilities for teaching the natural sciences.

GEOLOGICAL LABORATORY.

The Geological Laboratory is provided with aneroid barometers, compasses, hand levels, pedometers, etc., for field work, two petrographic microscopes, and an excellent equipment of drawing apparatus for the construction of geological sections and

topographic maps; also, with apparatus for the construction of relief maps. A well equipped laboratory for Determinative Mineralogy has recently been added. There has also recently been added an excellent relief map of San Francisco Peninsula, 3 feet by 4 feet, and one of the State of Arkansas, 7 feet by 8 feet. The latter is a copy of the map that was made under the direction of Dr. John C. Branner for the Department of Mines, Manufactures, and Agriculture of Arkansas, and was displayed at the World's Fair. It is one of the best state relief maps in the country.

ENGINEERING LABORATORY.

The boilers generating steam for heating and power also furnish practice in determining the amount of steam made for each pound of coal burned. The amount of moisture in the steam is also tested by a calorimeter constructed in the shops. A feed pump and an injector are so arranged that comparative trials may be made for efficiency as boiler feeders. The engine which runs the shops and electric light plant is used to furnish practice in measurement of power from indicator cards and the pony brake. During the session of 1892 a series of tests were made to determine the water consumption of the engine per horse power per hour, in which the weight of steam used was determined by condensing the exhaust in a feed water heater at atmospheric pressure, and weighing the amount delivered. In the fall of 1893, a 30-horse power Reynolds-Corliss engine was installed in the main laboratory, where it is used to drive the dynamos, testing machine, etc. It has proved to be of the greatest service in experimental work, and especially in valve setting.

A Riehle testing machine, run by a 10-horse power motor and capable of exerting a full pressure of 60,000 pounds, has been installed and used in experimental work upon the materials used in buildings, bridges, and machinery. A practical application has been made in determining the tensile strength of the steel plates used in the two 30-horse power boilers for the Branch Normal shops, and the 60-horse power boiler for the Arkansas Industrial University shops.

A 2,000-pound cement testing machine is used to determine the tensile strength of various cements and their resistance to crushing. A saw for stone cutting has been designed and constructed for the purpose of cutting out specimens for tensile and crushing tests.

## ELECTRICAL LABORATORY.

The Electrical Laboratory affords excellent facilities for experimental work with practical dynamo electric machines. In the laboratory will be found the leading types of machines for arc and incandescent lighting and for power; constant current and constant potential motors, and generators, representative of the different methods of power transmission; a Kelvin balance, standard cells, and a potentiometer for standardizing measuring instruments; Weston and other voltmeters and ammeters; electro-dynamometers; galvanometers of the tangent, reflecting, and Deprez-D'Arsonval types; magnetometers; standard resistance coils and bridges, and absorption dynamometers.

This apparatus enables the student to carry on a very wide range of experimental work, and to attain practical efficiency in operating and testing electrical machinery and instruments.

Students are also allowed to inspect the plant of the Fayetteville Electric Light and Power Company, and to take measurements and make tests on it. The Electrical Laboratory is connected with their primary mains, and is thus supplied with alternate currents of high potential for experimental work.

## SHOP EQUIPMENT.

The present equipment is incomplete, consisting, for the wood shop, of a 12-inch buzz planer, a circular saw, and two 12-inch wood lathes, beside small tools and work benches; for the foundry, of an 18-inch Colliau cupola and moulder's tools; for the blacksmith shop, of a portable forge, several anvils and a large number of small tools; for the machine shop, of a 14-inch engine lathe, 20-inch drill press, pipe fitting and other bench tools. A 35-horse power Westinghouse compound engine provides power for running the machinery, and exhaust steam for the heating pipes of the new building.

The boiler room contains two 75-horse power return tubular boilers, set in a three-travel furnace. These are used for heating the main building and running the shops. There are also two exhaust heaters, a duplex feed pump, and a pair of tanks, holding about 200 gallons each, for convenience in accurately measuring water used in boiler tests and other experimental work.

### DRAWING ROOM.

The equipment includes the usual tables and stools; and among the special apparatus and instruments may be mentioned the planimeter, pantograph, blue-print frame, traverse table, odontograph, slide rule, sets of railroad and machine curves, roof pitches, etc. A blue-print room has recently been fitted up with complete facilities for the details of the blue-print process. The room is also being provided with photographic apparatus which will be used to prepare lantern slides and prints illustrating various branches of engineering.

### SURVEYING EQUIPMENT.

For the work in railroad, land, and city surveying, the equipment furnishes chains, tapes, plumb bobs, a Locke level, aneroid barometer, sextant, Y level, transits with solar attachments, plane table, etc. The surrounding country also offers problems in most of the varieties of work which meet the practical surveyor. Each year, during the summer, a party of engineering students go into camp one week for practice in surveying and locating railway lines.

# GENERAL INFORMATION.

## REQUIRED, ELECTIVE, AND OPTIONAL STUDIES.

Each student must have not less than twelve recitations, or their equivalent per week; two hours of laboratory, shop or farm work, drawing, or sight reading, are counted as equivalent to one hour of recitation. When fewer than twelve recitations per week, or their equivalent, are specified in any course, the student must elect studies to supply the deficiency. Students known to be in ill health or having physical defects which interfere with their studies, are sometimes allowed less than twelve recitations. Electives taken from the studies of a class one year below have full value; but, if more than one year below, their value will be fixed by the Faculty. Students are not allowed to take additional studies to exceed the equivalent of eighteen recitation hours in all (exclusive of military work), except by permission of the Faculty.

## SPECIAL STUDENTS.

Persons who desire to pursue studies in one of the courses of the University and do not desire to become candidates for a degree will be admitted on the following conditions:

1. In general all persons under 21 years of age must pass the entrance examinations required of candidates for some degree, as described on pages 36 to 40.

2. Persons over 21 years of age must show that they have a good knowledge of English and

are otherwise prepared to pursue profitably the studies they may desire to pursue.

Should a student who enters under the preceding provision (2) subsequently become a candidate for graduation, he must then pass all examinations for admission required of such candidate.

### CLASSIFICATION OF STUDENTS.

A student is enrolled as a member of the highest class with which he has nine recitations or their equivalent per week, provided he be pursuing in class all the lower studies in his course which have not been completed.

### EXAMINATIONS.

1. Examinations, chiefly in writing, are held near the end of each term. The grades are determined by combining the values of the daily recitations and of the examinations, and are divided into five groups, as follows: "Excellent" (E); "Good" (G); "Fair" (F); "Poor" (P); "Bad" (B). A grade not lower than "Fair" is required for a "pass," which is the equivalent of about 75 per cent. At the end of each term a report is made to the parent or guardian of each student showing his progress, general conduct, etc.

2. If a student has failed in any study, he may nevertheless be allowed to take up the next study in advance, provided he be deemed by the professor in charge of the department to which such study belongs, not incompetent to pursue it; but he will be required to pass a satisfactory examination in the study in which he failed, or take it up with the next class.

3. If a student has proven competent to continue his advanced work, but has not completed all the preceding studies in his course, he must resume the latter, and if he be found to be overworked, he will be required to drop a part of his advanced work.

### DEGREES.

The degrees conferred for undergraduate work are the academic degrees of Bachelor of Arts and Bachelor of Science, and the technical degrees of Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, and Bachelor of Electrical Engineering.

For graduate work the degrees conferred are Master of Arts, Master of Science, and Doctor of Philosophy.

### HONORS.

Students who have attained grade "E" in work aggregating fifty-five hours per week (counted on the basis of a four years' course), are granted degrees "with special distinction."

Students who have attained grade "E" in work aggregating thirty-five hours per week, or grade "E" or "G" in work aggregating fifty-five hours per week, are granted degrees "with distinction."

## UNIVERSITY ORGANIZATIONS.

### LITERARY SOCIETIES.

Material changes have been recently made in the organization of the literary societies, and their meetings, which are held weekly, afford enlarged opportunities for improvement in declamation, com-

position, debate, etc. Renewed interest in this valuable means of culture is shown by a number of students.

### SCIENCE CLUB.

The Science Club was organized early in the fall of 1896. Its purpose is to stimulate interest in all branches of science, encourage the spirit of scientific investigation, and keep its members in touch with the progress of science in general. While membership is open to all, students taking the science courses are urged to take an active interest in the meetings of this club. The meetings are held on the first and third Saturday evenings of each month.

### THE SOCIOLOGY CLUB.

The Sociology Club is an organization having for its aim the investigation and discussion of the social relations and social problems of our civilization. This year its work has been conducted according to the outline of Small and Vincent's "Elements of Sociology," but many variations have been made to encourage original thought and study. Membership is free, and includes, besides students and professors, many citizens of Fayetteville. This club meets biweekly on Friday evenings.

### THE ARKANSAS UNIVERSITY GEOLOGICAL AND BIOLOGICAL SURVEY.

For the promotion of interest in the natural sciences and a systematic investigation of the many interesting questions of natural history within and adjoining the State, it is proposed to organize the Arkansas University Geological and Biological Sur-

vey. A party will be organized for field work during the summer vacation under the direction of the professors in charge of Geology and Biology. Any student whose attainments are such as to permit him to take the work to advantage may be admitted to the party. In each case credit will be given in the University course according to the time spent and the character of the work done. Science teachers and others interested in science throughout the State are cordially invited to avail themselves of this opportunity of doing a pleasant and profitable summer's work.

### UNIVERSITY MAGAZINE.

The "Ozark," successor to the "University Magazine," is a monthly periodical published by a stock company and edited by a committee of students. It is sent free to all the accredited schools and to such other schools in the State as may desire to have it.

### LECTURE COURSE.

The following lectures and entertainments were given during the year, under the auspices of the Lecture Association of the University:

E. P. Elliott—Monologue, "Hazel Kirke," November 6.

Rev. Sam W. Small—"Is Our Civilization a Failure?" November 25.

Polk Miller—"The Old Plantation Negro," December 21.

Champ Clark—"Noted Characters of the Fifty-third Congress," January 9.

Dr. Robert Nourse—"Dr. Jekyl and Mr. Hyde," February 15.

John Temple Graves—"The Woman of the Twentieth Century," April 3.

Schubert Quartette—Musical programme, April 22.

NOTE—One other lecture was given, but at the time of going to press arrangements were not completed for it.

## RELIGIOUS EXERCISES.

Religious exercises are held regularly in the University Chapel at the beginning of each daily session. Students are required to attend.

The churches of Fayetteville cordially welcome the students to their Sunday Schools and various meetings for prayer and religious instruction. The denominations represented in the city are Baptist, Presbyterian, Cumberland Presbyterian, Methodist, Protestant Episcopal, Christian, and Roman Catholic. Many of the students are actively engaged in the work of the different church societies and guilds. The Young Men's Christian Association has commodious quarters in the city, and a commendable interest is shown. A Bible class has held meetings Sunday afternoon, and has been well attended.

## ATHLETIC ASSOCIATION.

The purpose of this organization is to encourage the development of the physical man.

The Association as originally formed consisted of the A. I. U. Athletic Club, the A. I. U. Tennis Club, the A. I. U. Baseball Club and the A. I. U. Football Club; and it is further provided that if any other club, organized by the students of the University for the practice of any sport, game, or exercise not already represented by one of the members of the Association, shall make a written application for membership in the Association, and the said application shall be approved by the governing body of the Association, the petitioning club shall become a member of the Association with

all the rights and privileges pertaining to such membership.

## SALE OF ARDENT SPIRITS PROHIBITED.

By an act of the General Assembly of the State of Arkansas, approved March 6, 1875, it is unlawful for any person to sell or give any vinous or ardent spirits within 3 miles of the Arkansas Industrial University, unless it be prescribed by a regular practicing physician for medicinal purposes.

## FEES AND EXPENSES.

| | |
|---|---|
| Matriculation, charged all new students | $ 5 00 |
| Tuition per session, charged all except beneficiary students | 10 00 |
| Contingent fee, after first year | 3 00 |
| Tuition in Music (see page 88) | |
| Furniture for dormitory students, from $6 to | 15 00 |
| Board in dormitory at cost, per month, from $7 to | 8 00 |
| Board in private families, per month, from $10 to | 15 00 |
| Uniform suit, purchased by student, from $13 to | 16 00 |
| Washing, per month, about | 1 00 |

The necessary expenses for a student who wishes to live cheaply are:

| | |
|---|---|
| Board in dormitory, 9 months, about | $ 72 00 |
| Washing, 9 months, about | 9 00 |
| Furniture, first year only, $6 to | 15 00 |
| Matriculation, first year only | 5 00 |
| Contingent fee, after first year | 3 00 |
| Total expenses first year, apart from books and clothes, about | $ 101 00 |
| Total expenses afterward, apart from books and clothes, about | $ 84 00 |

Students leaving the University frequently sell their furniture at a small reduction.

Rooms in the University dormitories are free, but occupants provide their furniture, fuel and lights. If there are not rooms enough for all, preference is given to Arkansas students. An officer of the University is in charge of the building, and the rooms are inspected by the Faculty whenever deemed necessary.

Students boarding elsewhere are under the supervision of the President of the University, and are allowed to board only at places approved by him.

### BOARD FOR YOUNG LADIES.

There is at present no special residence for girls. They are assisted in finding board in respectable families; but the Faculty is not so situated as to exercise constant supervision over them out of college hours. Parents at a distance who send a daughter to the University, should therefore be well satisfied as to her discretion, or else should place her under control of the family with whom she boards. The following ministers, pastors of the local churches named, kindly offer their services in assisting to secure suitable boarding places for young ladies: Rev. S. W. Davies, Presbyterian; Rev. R. H. Hainesworth, Methodist; Rev. F. T. Charlton, Cumberland Presbyterian; Rev. N. M. Ragland, Christian; Rev. Francis Bozeman, Baptist, and Rev. J. J. Vaulx, rector of St. Paul's Church (Episcopal).

### ARRIVAL OF STUDENTS.

A student, on arriving at Fayetteville, should report at once to the President of the University and matriculate.

Immediately after matriculation he must report to the professor controlling his major subject of study. This professor will direct him in his work, his examinations, choice of electives, etc. Any academic courses may be elected and such technical courses as may be approved by the professor of the major subject. Needless delay in reporting or unseemly conduct may justify exclusion from the University.

CONDITIONS OF ADMISSION TO THE UNIVERSITY.

Applicants for admission should present certificates of honorable discharge from the school last attended, or furnish other evidence of general good conduct.

PREPARATION FOR THE FRESHMAN CLASS.

1. *English.* Maxwell's English Grammar and Raub's Rhetoric, or a full equivalent; a composition of 200 to 300 words, correct in spelling, punctuation, paragraphing, and grammar, on a subject announced at the time of the examination. In 1897-1898 the subject of composition will be taken from Scott's Talisman (Ginn & Co.), or from Shakespeare's Julius Cæsar, or Midsummer Night's Dream (Maynard, Merrill & Co.).

Students, preparing for the Freshman class, should have annotated editions of these books and use constantly an unabridged dictionary. They should write as many as six compositions on subjects taken from these books, and should make a thorough review a short time before examination. More than half the failures are in composition and meters.

After the session of 1897-'98 the admission requirements in English will be those of the American

Association of Colleges, including Harvard, Yale, Cornell, and most of the leading institutions in the United States. The examination will be divided into two parts:

(*a*) *Reading and Practice.* A few books are assigned for reading. The candidate is required to present evidence of a general knowledge of the subject-matter of these books, and to answer simple questions on the lives of their authors. The form of examination will usually be the writing of a paragraph or two on each of several topics set in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and calls for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of these books.

The books set for this part of the examination will be:

1898-1899—Milton's Paradise Lost, Books I. and II.; Pope's Iliad, Books I. and XXII.; the Sir Roger de Coverley Papers in The Spectator; Goldsmith's The Vicar of Wakefield; Coleridge's Ancient Mariner; Southey's Life of Nelson; Carlyle's Essay on Burns; Lowell's The Vision of Sir Launfal; Hawthorne's The House of the Seven Gables.

1899-1900—Dryden's Palamon and Arcite; Pope's Iliad, Books I., VI., XXII. and XXIV.; the Sir Roger de Coverley Papers in The Spectator; Goldsmith's The Vicar of Wakefield; Coleridge's

Ancient Mariner; De Quincey's The Flight of a Tartar Tribe; Cooper's The Last of the Mohicans; Lowell's The Vision of Sir Launfal; Hawthorne's The House of the Seven Gables.

1900–1901—Dryden's Palamon and Arcite; Pope's Iliad, Books I., VI., XXII., and XXIV., the Sir Roger de Coverley Papers in The Spectator; Goldsmith's The Vicar of Wakefield; Scott's Ivanhoe; De Quincey's The Flight of a Tartar Tribe; Cooper's The Last of the Mohicans; Tennyson's The Princess; Lowell's The Vision of Sir Launfal.

(*b*) *Study and Practice.* Other books are assigned for more careful study. The examination upon these books covers subject-matter, form, and structure, and also tests the candidate's ability to express his knowledge with clearness and accuracy.

The books set for this part of the examination will be:

1898-1899—Shakespeare's Macbeth; Burke's Speech on Conciliation with America; De Quincey's The Flight of a Tartar Tribe; Tennyson's The Princess.

1899-1900—Shakespeare's Macbeth; Milton's Paradise Lost, Books I. and II.; Burke's Speech on Conciliation with America; Carlyle's Essay on Burns.

1900-1901—Shakespeare's Macbeth; Milton's Paradise Lost, Books I. and II.; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

In order to pass this examination, a student must have a good practical knowledge of English

Grammar and of an elementary Rhetoric such as Raub's, Waddy's, or Williams's; and no candidate will be accepted whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.

2. *Arithmetic.* The examination will be taken from Wentworth's Grammar School Arithmetic, the whole of which is required. Teachers preparing candidates for entrance should, in teaching arithmetic, require them to analyze every example capable of analysis, or give a thorough course in Mental Arithmetic. Students who are not quick at analysis in Arithmetic usually make poor progress in higher Mathematics.

3. *Algebra.* To Simultaneous Quadratic Equations, with special attention to factoring, the theory of exponents, and radicals. The examination will be taken from Wentworth's Higher Algebra.

4. *Plane Geometry.* The first four books of Wentworth's Geometry.

5. *History.* The examination will be taken from Chambers' History of the United States, and from Barnes's General History.

6. *Geography.* Any complete manual, such as Maury's or Frye's, will give the preparation, if thoroughly mastered. Special attention is given to the geography of the United States and of Arkansas.

7. *Physiology.* Martin's Human Body, briefer course.

8. *Latin.* Collar & Daniell's Beginner's Latin; Cæsar's Gallic War, four books, with questions on Grammar and on the subject-matter, military equipment, etc. Harper & Tolman's Cæsar is recom-

mended. Latin is not required for admission except of Normal students and of those who are candidates for the degree of Bachelor of Arts.

Candidates for the higher classes, or for the Freshman class after beginning of session, will be examined also in subjects passed over by the class.

Each student should come prepared for all the studies in some one class. If he is behind in one or more studies, he becomes irregular, and is necessarily subject to many inconveniences, though he may be admitted, and classified according to his attainments.

### ORDER OF EXAMINATIONS FOR ADMISSION.

*Wednesday, September 15.*—9 a. m., registration of students; 1 to 3 p. m., Geometry; 3 to 4 p. m,, Physiology.

*Thursday, September 16.*—1 to 3 p. m., Algebra; 3 to 4 p. m., Geography.

*Friday, September 17.*—9 to 12 m., Arithmetic; 1 to 4 p. m., Latin.

*Saturday, September 18.*—9 to 11 a. m., English Grammar and Analysis; 11 to 12 m., English Composition, Reading; 1 to 2:30 p. m., U. S. History; 2:30 to 4 p. m., General History.

### EXAMINATIONS AT PLACES OTHER THAN FAYETTEVILLE.

Students living more than a hundred miles from the University may obtain special local examinations two weeks before the beginning of each session. The questions will be sent to the principal of any school or to any examiner, provided such officer makes his application not later than one month before the beginning of a session. The questions must

be submitted by the principal or county examiner to the candidate under the usual restrictions of a written examination, and the questions and answers must be returned by the same officer to the University with his indorsement that the examination was properly conducted.

## ACCREDITED SCHOOLS.

*Admission on Certificate.*—Any high school or academy whose course of instruction covers all the branches requisite for admission to the Freshman class of the University may be placed upon the list of accredited schools. Upon application from the principal of any high school or academy an officer of the University will be sent as soon as possible to examine the course of study and methods of teaching. If his report is favorable the school will be placed upon the accredited list, and its graduates will be admitted to the Freshman class without examination. Students of accredited schools who may not be graduates will be excused from examination on subjects required for admission to the University upon certificates of proficiency in such studies from the principal. A school once accredited will retain that relation until its administration is changed, or until a notification that the work is unsatisfactory is received from the University. Upon a change of administration, an application to be continued upon the list of accredited schools should be forwarded to the University. Such request may be granted without a new examination if the authorities can assure themselves that no prejudicial changes in the courses of study or in the thoroughness of instruction will be made.

The University will do all in its power to bring about that close and cordial relation which should bind together the various departments of the educational system of the State.

## LIST OF ACCREDITED SCHOOLS.

The President of the University cordially recommends the following schools as preparatory to the Freshman class:

Fort Smith High School, Principal, B. W. Torreyson.

Rogers Academy, Principal, J. W. Scroggs.

Little Rock High School, Principal, R. C. Hall.

Marianna Institute, Principal, T. A. Futrall.

Lonoke High School, Principal, J. J. Doyne.

Pine Bluff High School, Principal, J. H. Witherspoon.

Judsonia High School, Principal, W. W. Condray.

Paris High School, Paris, Tex., Principal, J. G. Wooten.

Hinemon University School, Monticello, Ark., Principal, J. E. Erwin.

Garnett High School, Garnett, Kan., Principal, F. McClellan.

Little Rock Academy, Principal, W. H. Tharp.

Helena High School, Principal, W. M. Rivers.

Hot Springs High School, Principal, Geo. B. Cook.

Amity High School, Principal, S. M. Samson.

Harrison High School, Principal, C. L. Scott.

Neosho Public School, Principal, J. M. Stevenson.

Arkansas Normal School, Sulphur Rock, Ark., Principal, J. W. Decker.

Paris Academy, Principal, G. S. Minmier, Paris, Ark.

Dardanelle High School, Principal, P. L. Burrow, Dardanelle, Ark.

Russellville High School, Principal, E. L. Gatewood, Russellville, Ark.

Eureka Springs High School, Principal, C. S. Barnett, Eureka Springs, Ark

APPOINTMENT OF BENEFICIARIES.

An Act of the General Assembly of the State of Arkansas "To Regulate the Appointment of Beneficiary Students in the Arkansas Industrial University and to Amend Section 4088 of the Digest of the Statutes of 1804," approved April 19, 1805, reads as follows:

"*Section 4088.* It shall be the duty of the Board of Trustees to apportion the number of beneficiaries who shall be admitted as students in the University, without tuition, among the several counties of the State, according to population, and to notify the county judge of each county of the number apportioned to the county at least two months prior to the beginning of each regular annual session of the school; and it shall be the duty of the county judge to appoint from the actual residents of the county the number of beneficiaries to which it may be entitled, a preference being given to those noted for diligence and proficiency in study; and the appointment so made shall be entered of record. If the judge of any county shall fail to appoint its quota of beneficiaries, or if those appointed shall fail to attend, the President of the University shall appoint such beneficiaries to the full number authorized by law from other counties having their full quota; *Provided*, such appointments shall be vacated on application of the county judge of a county so failing to fill its quota."

### NUMBER OF BENEFICIARIES.

The number of beneficiaries fixed by the Board of Trustees is 1,000, distributed to the counties of the State in proportion to the population.

There is also one "Honorary Scholarship" to each county, to be elected for superior merit and proficiency, from the public schools of each county, according to section 2, of act of July 23, 1868.

All the beneficiary students should be present at the opening of the first term, and unnecessary delay will lead to the forfeiture of their appointments.

### QUALIFICATIONS.

The attention of county judges is called to the following requirements for admission to the lowest preparatory class:

1. Wentworth's Grammar School Arithmetic.
2. Maxwell's Elementary Grammar and Composition.
3. Maury's or Frye's Complete Geography, or an equivalent.
4. The intelligent reading of the Fifth Reader.
5. The spelling of any words in the Fifth Reader.

It is *highly important* in making appointments to *note carefully these requirements; otherwise students coming to the University unprepared incur needless expense* and *go away disappointed and often discouraged.*

FORMS OF APPOINTMENT.

Students who have been appointed beneficiaries must bring evidence of appointment in the following form, to be sent by the judge of the county court, in accordance with the sixth section of an act approved March 6, 1875.

[*Form 1—Appointment.*]

No ..... [To be given to the student.]

TO WHOM IT MAY CONCERN:

I hereby appoint ..... ..... ..... of..... ..... .....County, State of Arkansas, as a beneficiary to the Arkansas Industrial University.

Given under my hand this ..... day of ..... .....189.....

Send a notice like the following to the President of the University, and one to the Secretary of the Board of Trustees, at Fayetteville:

[*Form 2—Notice to President of University.*]

Arkansas, }
..... }

*To the*..... ..... ..... ..... *University.*

I hereby notify you that I have this day appointed.....
of..... ..County, State of Arkansas, a beneficiary of the Arkansas Industrial University.

Given under my hand this ..... day of..... .....189.....

## APPORTIONMENT OF BENEFICIARIES.

| COUNTIES. | | COUNTIES. | |
|---|---|---|---|
| Arkansas | 10 | Lee | 10 |
| Ashley | 13 | Lincoln | 12 |
| Baxter | 7 | Little River | 6 |
| Benton | 24 | Logan | 19 |
| Boone | 15 | Lonoke | 15 |
| Bradley | 8 | Madison | 15 |
| Calhoun | 7 | Marion | 10 |
| Carroll | 16 | Miller | 12 |
| Chicot | 12 | Mississippi | 9 |
| Clay | 13 | Monroe | 12 |
| Clark | 15 | Montgomery | 7 |
| Cleburne | 8 | Nevada | 17 |
| Cleveland | 10 | Newton | 6 |
| Columbia | 19 | Ouachita | 15 |
| Conway | 16 | Perry | 6 |
| Craighead | 8 | Phillips | 28 |
| Crawford | 11 | Pike | 3 |
| Crittenden | 11 | Poinsett | 7 |
| Cross | 6 | Polk | 3 |
| Dallas | 9 | Pope | 19 |
| Desha | 11 | Prairie | 10 |
| Drew | 15 | Pulaski | 45 |
| Faulkner | 17 | Randolph | 12 |
| Franklin | 18 | Saline | 11 |
| Fulton | 8 | Scott | 19 |
| Garland | 11 | Searcy | 7 |
| Grant | 8 | Sebastian | 28 |
| Greene | 9 | Sevier | 8 |
| Hempstead | 24 | Sharp | 12 |
| Hot Spring | 10 | Stone | 8 |
| Howard | 12 | St. Francis | 10 |
| Independence | 21 | Union | 16 |
| Izard | 14 | Van Buren | 11 |
| Jackson | 15 | Washington | 30 |
| Jefferson | 29 | White | 21 |
| Johnson | 15 | Woodruff | 12 |
| Lafayette | 6 | Yell | 18 |
| Lawrence | 10 | | |

### ABSENCES AND WITHDRAWALS.

Absences from the University during the session are not permitted except for valid reasons. The right of a parent to withdraw his son at any time, without reason assigned, is recognized; but without so withdrawing him, he cannot relieve him of the obligation to attend to his duties at the University. The incidental absences of students during the session are exceedingly disadvantageous, both to themselves and to the University. While, therefore, the Faculty permit them, in cases where propriety or urgent necessity seems to make them unavoidable, they hold it to be a duty to inquire into the reasons for which the permission is solicited.

Parents or guardians who wish to withdraw their children or wards from the University should write to the President stating their wishes. No honorable discharge will be given to a student under age who is unable to produce the written application of his parent or guardian for his withdrawal, nor will an honorable discharge be given to a student under censure of any kind, whether for neglect of duty or other cause, even though he may have the consent of his parent or guardian for his withdrawal from the University.

### THE AGRICULTURAL EXPERIMENT STATION.

The National Government established the Experiment Station as a department of the University in 1887, and maintains it to investigate agricultural problems for the aid of the farmers of the State.

The work of the Experiment Station is divided into the special lines of Agriculture, Horticulture,

Chemistry, and animal and plant diseases. Specialists are employed in each line, and experiments are made both in the field and laboratory in the improvement of soils, the rotation of crops, diseases of plants and domestic animals, in fertilizers, the value of stock foods, dairying and other matters. Students interested in agricultural subjects are given opportunity to observe the experiments and to acquaint themselves with the work of the Station in its various departments; the bulletins are also available for their use. The experiments and their results are published in bulletins, which are sent free to farmers, stock raisers and fruit growers of the State, and to others interested in agriculture.

Those who desire the Station bulletins should apply for them to the Director of the Station, Fayetteville, Ark. One application is sufficient to obtain all future bulletins, if desired.

## MILITARY DEPARTMENT.

The head of this department is an officer of the United States Army detailed by the War Department for duty at the University.

All male collegiate students are required to take the Theoretical Course, and all male students over 15 years of age are required to take the Practical Course in Military Science, the latter including infantry drill, target practice, camping, guard duty and various other exercises, the course covering the entire period of the student's stay at the University. This instruction is in accordance with the Act of Congress donating lands for the establishment of the University, which requires that "Military Science and

Tactics ' shall be taught in addition to the usual course of study.

The system of practical instruction closely follows that used in the United States Army. It contains a course of gymnastic exercises for the development and improvement of the arms, chest, legs, hands and feet. Besides being excellent physical training, this instruction has many advantages mentally. The necessity of being alert, listening for each word of command, and acting promptly on it, quickens the wit and cultivates the habit of fixing the attention and concentrating the thoughts. In addition to all this, it inculcates in the student a respect for authority and discipline which is equaled by no other system.

The cadets are organized into two battalions composed of field staff, band, and six companies. The officers and noncommissioned officers are selected from those students who are most proficient in their drill and military studies, and most exemplary in their deportment, the majors, captains and lieutenants being taken, usually, from the Senior and Junior classes, and sergeants and corporals from the Sophomore and Freshman classes. An office in one of the battalions is one of merit and distinction, and any unbecoming conduct subjects the appointee to reduction to the ranks.

In connection with the battalions a band of not exceeding twenty-five pieces is maintained. It receives the best instruction obtainable, practices three hours per week, and performs at all military ceremonies.

A competitive drill is held annually at the close

of the school year, when prizes are awarded for proficiency in this department. The result of the last competition held in June, 1896, was as follows:

COMPETITION AMONG THE COMPANIES.

To Company "D", Captain J. L. Moore, commanding, was awarded the National Color for the following year.

CAPTAINS' COMPETITION.

To Captain (now Major) E. K. Braly was awarded the Sword.

INDIVIDUAL COMPETITION.

To Corporal E. G. Martin was awarded the Gold Medal.

ARMY APPOINTMENTS.

The three students of the Senior class having the highest grade of merit in this department are reported to the Secretary of War, and their names are recorded in the Adjutant-General's Office and published in the Army Register for that year. The President of the United States, in appointing officers from civil life, gives preference to those whose names are so recorded. Cadet officers, on graduation, are brevetted in the State Guard with the rank held by them in the Cadet Battalions at the date of their graduation, and recommendations of the Commandant of Cadets as to special military qualifications of graduates of the military course are filed in the office of the Adjutant-General of the State and considered in appointing commissioned officers of the State Guard.

A neat uniform of gray cloth, with brass buttons and black trimmings, is required to be worn by

all cadets at drill. The uniform, complete, costs about $15, and with ordinary care will last an entire year.

ORGANIZATION OF THE CORPS OF CADETS FOR THE YEAR 1896-7.

Elias Chandler, First Lieutenant 16th U. S. Infantry,
Commandant of Cadets.

COMMISSIONED AND NONCOMMISSIONED STAFF.

Cadet First Lieutenant and Adjutant ..... James Mitchell, Jr.
Cadet First Lieutenant and Quartermaster ..... R. S. Medearis.
Cadet Sergeant Major ..... D. P. Holmes.
Cadet Quartermaster Sergeant ..... J. L. Campbell.

BAND.

Cadet First Lieutenant, Commanding Band ..... Willie Howell.
Cadet First Lieutenant, Leader of Band ..... I. F. Stewart.
Cadet Second Lieutenant, Assistant Leader of Band ..... H. A. Melton.
Cadet Principal Musician ..... A. W. Bevers.
Cadet Principal Musician ..... R. N. Cummings.
Cadet Drum Major ..... H. D. Mann.
Cadet Sergeant of the Band ..... T. D. Warner.

FIRST BATTALION.

Cadet Major, Commanding the Battalion ..... J. H. Davis.

COMPANY "B."

Cadet Captain ..... E. L. Spencer.
Cadet First Lieutenant ..... R. N. Graham.
Cadet Second Lieutenant ..... C. D. Frierson.
Cadet First Sergeant ..... B. E. Turner.
Cadet Sergeant ..... C. R. Fillmore.
Cadet Sergeant ..... J. B. Burton.
Cadet Sergeant ..... O. J. Owen.
Cadet Sergeant ..... G. B. Johnson.
Cadet Corporal ..... W. E. Babb.
Cadet Corporal ..... L. G. Crawley.
Cadet Corporal ..... T. A. Edwards.
Cadet Corporal ..... C. B. Martin.

COMPANY "C."

Cadet Captain ..... A. J. McDaniel.
Cadet First Lieutenant ..... C. G. Price.

Cadet Second Lieutenant ..... F. L. Dengler.
Cadet First Sergeant ..... J. H. Snapp.
Cadet Sergeant ..... W. Rattenbury.
Cadet Sergeant ..... D. F. Johnson.
Cadet Sergeant ..... O. M. Gates.
Cadet Sergeant ..... A. Dean.
Cadet Corporal ..... W. E. Pleasants.
Cadet Corporal ..... E. R. Berry.
Cadet Corporal ..... A. J. Walters.
Cadet Corporal ..... S. Connelly.

COMPANY "D" (COLOR COMPANY).

Cadet Captain ..... J. L. Moore.
Cadet First Lieutenant ..... W. H. Askew.
Cadet Second Lieutenant ..... H. R. Brown.
Cadet First Sergeant ..... Wm. P. Johnson.
Cadet Sergeant ..... W. L. Goodwin.
Cadet Sergeant ..... W. V. Boatwright.
Cadet Sergeant ..... W. L. Wright.
Cadet Sergeant ..... T. C. Trimble.
Cadet Corporal ..... Wm. Fletcher.
Cadet Corporal ..... J. R. Smith.
Cadet Corporal ..... I. P. Schindel.
Cadet Corporal ..... H. L. Ross.

SECOND BATTALION.

Cadet Major, Commanding the Battalion ..... E. K. Braly.

COMPANY "A."

Cadet Captain ..... W. E. Pruett.
Cadet First Lieutenant ..... A. B. Crozier.
Cadet Second Lieutenant ..... J. R. Howard.
Cadet First Sergeant ..... F. B. Kirby.
Cadet Sergeant ..... J. H. Blair.
Cadet Sergeant ..... E. T. Brown.
Cadet Sergeant ..... J. M. Davis.
Cadet Sergeant ..... W. W. Beavers.
Cadet Corporal ..... S. L. Henderson.
Cadet Corporal ..... T. Pace.
Cadet Corporal ..... B. I. Moore.
Cadet Corporal ..... E. Howell.

COMPANY "E."

Cadet Captain ..... G. Nicholls.
Cadet First Lieutenant ..... G. H. Askew.
Cadet Second Lieutenant ..... H. Y. Fishback.
Cadet First Sergeant ..... J. L. Hornor.
Cadet Sergeant ..... G. B. Wood.
Cadet Sergeant ..... R. P. Rutherford.
Cadet Sergeant ..... R. L. Derrick.
Cadet Sergeant ..... H. A. Patterson.
Cadet Corporal ..... F. N. Johnston.
Cadet Corporal ..... W. H. Crozier.
Cadet Corporal ..... M. Harper.
Cadet Corporal ..... P. L. Hathcock.

COMPANY "I."

Cadet Captain ..... M. L. Bell.
Cadet First Lieutenant ..... A. V. Smith.
Cadet Second Lieutenant ..... W. A. Ross.
Cadet First Sergeant ..... R. W. Huie.
Cadet Sergeant ..... J. Randolph.
Cadet Sergeant ..... C. M. Nichol.
Cadet Sergeant ..... F. Horsfall.
Cadet Sergeant ..... D. W. Taylor.
Cadet Corporal ..... A. Vincenheller.
Cadet Corporal ..... H. E. Truelock.
Cadet Corporal ..... R. L. Saxon.
Cadet Corporal ..... G. C. Abernathy.

# DEPARTMENTS OF INSTRUCTION.

The arrangement of elective courses enables students to concentrate their work upon special lines or subjects, and each student is expected to complete the undergraduate studies of at least one language or science. The following rules for elective studies will be observed:

1. No study can be elected unless the professor in charge deems the student prepared to pursue it.

2. No elective study shall be changed before the end of the term.

3. No professor shall be required to teach an elective course unless three or more students pursue it.

## DEPARTMENT OF AGRICULTURE.

### AGRICULTURE.

R. L. BENNETT, Superintendent of Agriculture.

1. *Soils* ..... 2

The physics, water, temperature, drainage, tillage, and management of soils.

Required of Freshmen in Agricultural Course.

2. (*a*) *Farm Crops* ..... 2

Rotation; grasses; seed varieties; extensive and intensive farming.

(*b*) *Farm Machinery and Buildings.*

Required of Sophomores in Agricultural Course.

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The figure on the left is the number of the course; that on the right the number of recitation hours per week.

3. *Breeding Animals* ..... 2

Selection and improvement; breeds; poultry; dairying.
Required of Juniors in Agricultural Course.

4. *Rural Economics* ..... 2

Markets; history of agriculture.
Required of Seniors in Agricultural Course.

## HORTICULTURE.

J. T. STINSON, Horticulturist.

1. (*a*) *Propagation of Plants* ..... 3

FIRST TERM—General nursery work; grafting, budding, growing, and packing trees and plants for shipment.

(*b*) *Vegetable Gardening.*

SECOND TERM—The study of the leading vegetables for gardens and under glass; forcing of vegetables and general gardening, with practical work in growing vegetables for the market; greenhouse construction.
Required of Sophomores in Agricultural Course.

2. (*a*) *Fruit Culture* ..... 3

FIRST TERM—A study of the leading fruits, including grapes, orchard and small fruits, with methods of cultivating and marketing.

(*b*) *Landscape Gardening.*

SECOND TERM—Landscape Gardening; laying out and planting of grounds; the study of shrubs, flowers, and ornamental trees; practical exercises in laying out and beautifying grounds.
Required of Juniors in Agricultural Course.

3. (*a*) *Forestry* ..... 2

FIRST TERM—Trees for shade, ornament, and shelter; improvement and care of forests; influence of forests on soil and climate.

(*b*) *Plant Breeding* .....

SECOND TERM—Crossing of plants; originating new varieties; plant variation.
Required of Seniors in Agricultural Course.

## AGRICULTURAL CHEMISTRY AND METEOROLOGY.

G. L. TELLER, Chemist.

1. *Agricultural Chemistry* ..... 3

Lectures and recitations on the chemistry of plant nutrition and growth, soils, manures, foods, and feeding and dairy products.

Required of Sophomores in Agricultural Course.

2. *Meteorology* ..... 3

A study of winds, storms, rainfall, and changes of temperature in soils and air; weather forecasts; relation of weather and climate to plant growth and preservation. Opportunities will be given for the students to become familiar with the instruments used in making and recording weather observations.

Required of Seniors in Agricultural Course.

## ANIMAL PATHOLOGY AND BACTERIOLOGY.

R. R. DINWIDDIE, Pathologist and Bacteriologist.

1. (*a*) *Anatomy and Physiology of Domestic Animals* 3

Outlines of equine anatomy, with a comparative study of the anatomy of other species of farm animals; dissection of one of the smaller quadrupeds.

(*b*) *The Physiology of Animal Nutrition and Reproduction.*

These subjects are studied with special regard to their bearing on the intelligent and scientific feeding, breeding, and care of live stock on the farm.

Required of Juniors in Agricultural Course.

2. (*a*) *Bacteriology and Hygiene* ..... 3

A study of bacteria and their relation (1) to soils and plant growth; (2) to dairying and the handling of milk; (3)to animal and vegetable pathology; laboratory work in bacteriology.

(*b*) *Farm and Stable Hygiene.*

The causes and prevention of parasitic and communicable diseases.

Required of Seniors in Agricultural Course.

*Electives.*—Juniors and Seniors may elect for special study, any subject in which they are most interested. Either German or French may be elected.

## ANCIENT LANGUAGES.

J. C. FUTRALL, Professor.
E. F. SHANNON, Associate Professor.

In this department the following courses are offered:

### LATIN.

1 *Sallust, Cicero, and Virgil* ..... 3

An accurate knowledge of the Latin forms is insisted upon; exercises in prose composition taken from Collar's Practical Latin Composition; Roman History.

*Associate Professor Shannon.*

Required of Freshmen in Arts.

2. *Livy, Cicero, and Horace* ..... 3

Systematic study of the grammar; exercises in prose composition, based chiefly upon the authors read in class; the metres of Horace; sight reading; Roman literature.

*Professor Futrall.*

Required of Sophomores in Courses I. and II.

3 *Tacitus and Roman Life in Latin Prose and Verse, by Peck and Arrowsmith*..... 2

Designed to give to those students who do not propose to take Courses 4 and 6 a better reading knowledge of the language than can be attained by the completion of Course 2; sight reading.

*Associate Professor Shannon.*

Elective for students who have completed Course 2.

4 *Livy, Cicero, and Tacitus* ..... 2

Large amounts of each author read in class; parallel reading assigned; study of the grammar continued; Roman Literature.

*Professor Futrall.*

Required of Juniors in Course I.

5. *Sight Reading and Prose Composition* ..... 2

A play of Plautus will be read at sight. The exercises in prose composition will be based chiefly on the authors read in Course 3.

*Professor Futrall.*

Required of Juniors in Course I.

6. *Juvenal, Catullus, Terence, and Horace* ..... 2

As much of each author as possible will be read in class, and a large amount of parallel reading will be assigned.

*Professor Futrall.*

Elective for students who have completed Course 4.

7. *Sight Reading and Prose Composition* ..... 1

*Professor Futrall.*

Required of Seniors in Course I. who elect Course 6.

Text-books: Bennett's and Gildersleeve's Grammars; Liddell's History of Rome; Bender's Roman Literature; Crutwell's Roman Literature. Any approved edition of the Latin authors may be used, except when certain editions are prescribed.

## GREEK.

1. *Elementary Course* ..... 4

White's Beginner's Greek Book, with selections for reading. A thorough mastery of the forms and constructions given in this book is required.

*Associate Professor Shannon.*

Required of Freshmen in Course I.

2. *Xenophon and Lysias* ..... 3

This course is intended to familiarize the student with all the ordinary Attic forms and constructions; frequent exercises in oral and written translation of English into Greek, based upon the text read, are given, and some practice in sight reading; Goodwin's Grammar.

*Professor Futrall.*

Required of Sophomores in Course I.

3. *Homer, Herodotus and Thucydides* ..... 3

Systematic study of the grammar; exercises for translation into Greek, prepared by the professor; sight reading.

*Associate Professor Shannon.*

Required of Juniors in Course I.

4. *Plato, Sophocles and Aristophanes*..... 3

One dialogue of Plato; one play each of Sophocles and Aristophanes; Goodwin's Greek Moods and Tenses.

*Professor Futrall.*

Elective for students who have completed Course 3.

Text-books: Goodwin's Revised Greek Grammar; Goodwin's Greek Moods and Tenses; Collar and Daniell's Prose Composition, based on Xenophon's Anabasis; any approved edition of the Greek authors may be used, except when certain editions are prescribed.

## BIOLOGY.

PROFESSOR MCNEILL.

### BIOLOGY.

1. *General Biology*..... 3

Recitations twice, and laboratory two hours per week. A brief study of typical plants and animals with reference to structure, development and relationship. This course is introductory to both Botany and Zoölogy. Text-books: Parker's Biology; laboratory manual, Boyer's Practical Biology.

Required of Freshmen in Course VI., and of Seniors in Course VII.

### BOTANY.

1. *Systematic Botany*..... 3

One lecture a week for the first half of the first term, with four hours of laboratory work. Six hours a week laboratory work from March 1 to the end of the term. Designed to give students a general knowledge of the classification of plants and a more particular acquaintance with the seed plants and ferns of Northwest Arkansas. Text-book: Gray's Manual of Botany.

Required of Sophomores in Course VI., and of Freshmen in Normal Course.

2. *Physiological Botany*..... 3

Laboratory work six hours a week from November 15 to March 1.

Text-book: MacDougal.

Required of Sophomores in Course VI.

3. *Bacteriology* ..... 5

Ten hours a week laboratory work for the first term. Text-book: Hueppe's Methods of Bacteriological Investigations.
Elective for students who have passed 1 and 2.

## ZOOLOGY.

1. *General Zoology* ..... 3

One recitation and four hours laboratory work per week. A general course in animal morphology and systematic zoölogy. The systematic work will be restricted to vertebrates. Text-book: Hertwig's Essentials of Zoölogy. Laboratory Guide: Jordan's Manual of Vertebrates.
Required of Sophomores in Course VI., and of Sophomores in Normal Course.

2. *Vertebrate Anatomy* ..... 3

Recitations twice per week and dissection of typical vertebrates. Text-book: Weidersheim's Anatomy of Vertebrates.
Required of Juniors in Course VI.

3. *Neurology.*

Lectures twice a week, second term, second half.
Required of Juniors whose course requires psychology.

4. *Animal Histology* ..... 5

Two recitations and eight hours in the laboratory per week, first term. Open only to students who have taken Course 2. Text-book: Schafer's Essentials of Histology.
Required of Seniors in Course VI. Offered only in even years.

5. *Embryology* ..... 5

Recitations twice, and laboratory work six hours a week, second term. Open only to students who have taken Course 4. Text-book: Foster and Balfour's Elements of Embryology.
Required of Seniors in Course VI. Offered only in odd years.

## ENTOMOLOGY.

1. *General Entomology* ..... 5

Recitations twice, laboratory work two hours per week. Designed to give a general knowledge of the structure, habits and classification of insects and a more particular knowledge of the orders Orthoptera and Lepidoptera. Text-book:

Comstock's Laboratory Guide; French's Butterflies of the Eastern United States, and other manuals.

*Professor McNeill.*

Required of Juniors in Course VI.

2. *Economic Entomology* ..... 3

This course is a continuation of 1, and must follow it. The systematic work for each student will be restricted to one order or family of which he will be expected to make a special study. Special attention will be given to breeding and rearing of insects and to working out the life histories of those species that are little known.

Required of Seniors in Course VI.

## CHEMISTRY AND PHYSICS.

A. E. MENKE, Professor.
W. B. BENTLEY, Associate Professor.

1. *General Inorganic Chemistry* ..... 3

Lectures and recitations twice a week; laboratory work one afternoon throughout the year. Text-book: Richter.

*Professor Menke.*

Required of Freshmen in Course V., of Freshmen in Engineering Courses; of Sophomores in Courses VI. and VII.; alternative with Physics 1 for Sophomores in Courses II. and IV.

2. *Chemical Philosophy* ..... 2

Twice per week, second term. This course supplements the instruction in theoretical chemistry given in Course 2. Text-book: Tilden's Introduction to Chemical Philosophy. Reference books: Oswald's General Chemistry and Meyer's Theoretical Chemistry.

*Associate Professor Bentley.*

Required of Sophomores in Course V.

3. *Qualitative Analysis.*

(*a*) Recitations twice per week, first term. (*b*) Laboratory work two afternoons per week for engineering students, three afternoons for scientific students throughout the year. The recitations are occupied with the discussion of problems depending on the principles of qualitative analysis. The object of these discussions is to enable the student to understand the

methods of separation as well as to be able to follow them practically. In the laboratory a large number of substances, both simple and complex, are analyzed. Laboratory Manual: Hill's Lecture Notes on Qualitative Analysis.

*Associate Professor Bentley.*

Required of Sophomores in Course V., and of Juniors in Course VII.

4. *Organic Chemistry* . . . . . 3

Recitations three times per week throughout the year with laboratory work, if desired. Bernthsen's Organic Chemistry.

*Associate Professor Bentley.*

Required of Juniors in Course V.

5. *Quantitative Analysis* . . . . . 4

Laboratory work four afternoons per week. Practice in gravimetric and volumetric analysis. Manual: Thorp.

*Associate Professor Bentley.*

Required of Juniors in Course V.

6. *Quantitative Analysis* . . . . . 4

Second Course. Analysis of agricultural and food products. First term.

*Professor Menke.*

Required of Seniors in Course V.

7. *Technical Chemistry* . . . . . 3

Three times per week throughout the year. A study of industries having chemical principles and processes for a basis. Manuals: Wagner, Sadtler.

*Associate Professor Bentley.*

Required of Seniors in Course V., and of Seniors in Mechanical Engineering.

8. *Physical Chemistry* . . . . . 3

Chiefly laboratory work; determination of molecular weights according to the various methods in common use; thermochemical work, measurement of electric conductivity of electrolytes; practice with polariscope, refractometer, etc.

*Associate Professor Bentley.*

Elective.

9. *Assaying* . . . . . 4

Class meets at convenience of the instructor. Preparing and testing reagents, making cupels, etc., and assaying samples of furnace and mill products. Second term.

*Professor Menke.*

Required of Seniors in Course V.

10. *Toxicology* ..... 1

Once a week throughout the year. A working knowledge of qualitative and quantitative analysis is a condition requisite for admission to this class.

*Professor Menke.*

Elective.

11. *Gas Analysis* ..... 1

Practical work once a week throughout the year. This course is designed particularly for technical students.

*Professor Menke.*

Elective.

12. *Metallurgy of Iron and Steel* ..... 3

Three times per week the first term.

*Professor Menke.*

Required of Seniors in Electrical Engineering.

## PHYSICS.

1. *General Physics* ..... 3

Recitations twice and laboratory work once per week throughout the year. Recitations and experimental lectures on mechanics, sound, heat, light, magnetism and electricity.

*Professor Menke.*

Required of Freshmen in Courses V. and VI., and of Freshmen in Engineering; of Sophomores in Course III., and in Normal Course; alternative with Chemistry in Courses II. and IV.

2. *Electricity and Magnetism* ..... 3

Recitations twice and laboratory work once per week throughout the year. Text-book: Silvanus Thomson's Electricity and Magnetism.

*Professor Menke.*

Required of Sophomores in Engineering Courses.

3. *Physical Measurements* ..... 2

Measurements in mechanics, sound, heat, light, magnetism and electricity. Manual: Sabine.

*Associate Professor Bentley.*

Required of Sophomores in Engineering Courses.

## ELECTRICAL ENGINEERING.

W. N. GLADSON, Associate Professor.

1. *Practical Management of Dynamos and Motors* ..... 2

Recitations. Second term, two hours a week. A practical treatise on installing, starting, testing, locating and remedying faults in dynamos and motors. A practical laboratory guide. Text-book: Crocker & Wheeler's Practical Management of Dynamos and Motors.

Required of Second Year students in short course in Electrical Engineering.

2. *Contracts and Specifications* ..... 1

One hour a week, second term. A study of contracts as applied to engineering work; specifications for electrical installations. Text-book: Merrit's Electric Light Specifications.

Required of Seniors and Second Year students in Electrical Engineering.

3. *Technical Drawing* ..... 2

Lectures and practice two afternoons a week throughout the year. Working drawings of electrical apparatus; wiring plans designed by student.

Required of Juniors in the full course, and Second Year students in short course in Electrical Engineering.

4. *Technical Drawing* ..... 2

Lectures and practice two hours a week throughout the year; extension of Course 3. Drawings of circuit and machine; electrical calculations and mechanical designs of electrical machinery; complete power plants designed by student.

Required of Seniors in Electrical Engineering.

5. *Electrical Laboratory* ..... 1

One afternoon a week throughout the year. An extended course in magnetic and electrical measurements; current, electro-motive force, and resistance; use and calibration of instruments, voltmeters, and potentiometers; exploration of magnetic fields; dynamo work begun.

Required of Juniors in full course and of Second Year students in short course in Electrical Engineering.

6. *Electrical Laboratory* ..... 2

Four hours a week throughout the year. This is an extension of Course 5, and must be preceded by it. A full experimental

course in operating and testing direct and alternate current machines: transmission, storage, and transformation of electric energy. Special courses given suited to the preparation and object of the student.

Required of Seniors in Electrical Engineering.

7. *Dynamo Electrical Machinery* ..... 5

Recitations. First term, five hours a week. Confined chiefly to direct current apparatus, including types of motors, generators, and transformers; design, calculations, construction, testing, and operating. Text book: Thompson's Dynamo Electric Machinery.

Required of Juniors in the full course and of Second Year students in the short course in Electrical Engineering, and of Juniors in Mechanical Engineering.

8. *Theory of Alternate Currents* ..... 2

Recitations twice a week throughout the year. Text-book: Flemming's Alternate Current Transformer, Volume I.

Required of Juniors second term, and of Seniors first term, in Electrical Engineering.

9. *Alternate Current Machinery* ..... 3

Recitations and lectures three times a week, second term. Text-book: Flemming's Alternate Current Transformer, Volume II.

Required of Seniors in Electrical Engineering.

10. *Electric Railways* ..... 2

Recitations and lectures twice a week, second term.

Required of Seniors in the full course and of Second Year students in short course in Electrical Engineering.

11. *Telephony and Telegraphy* ..... 2

Lectures and recitations twice a week, second term. Text-book: Preece's Telephone.

Required of Seniors in Electrical Engineering.

12. *Electrical Measurements* ..... 2

Recitations and practice twice a week, first term. Text-book: Electrical Measurements by Carhart and Patterson.

Required of Seniors in Electrical Engineering.

13. *Electrical Design* ..... 1

Lectures and practice once a week, first term.

Required of Seniors in Electrical Engineering.

14. *Photometry* . . . . . 1

Lectures, recitations, and practice, once a week during the second term.

Required of Seniors in Electrical Engineering.

## ELOCUTION.

JESSIE L. CRAVENS, Instructor.

The course of instruction comprises a thorough training in the essentials of expression.

1. *Physical Training.*

The course includes thorough drill in (*a*) Light Gymnastics, to promote health and to give vigor and tone; (*b*) Athletic Gymnastics (in accordance with the law of Delsarte), for the attainment of grace, precision, and harmony, in action.

2. *Voice Culture.*

(*a*) Respiration: Natural breathing; economy of breath; drill in deep, effusive, expulsive, and explosive forms, as a basis for voice work.

(*b*) Voice culture: Exercises for the production and cultivation of open, pleasing, and musical tones; to avoid shrill and loud tones.

(*c*) Articulation: Correct use of the articulatory organs; exercises upon elementary sounds, separately and in combination; syllabication, accent, and pronunciation; defects of speech.

3. *Expression.*

In Reading, Recitation, and Oratory. Modulation, inflection, emphasis, pitch, quantity and movement; qualities; application of tone effects; light and shade in tone; transitions; pause effects; facial expression; action and repose; naturalness; clearness.

Text-books: The books in use and for reference are Southwick's Elocution and Action, Stebbins' System of Expression; Fulton and Trueblood's Practical Elocution, Hudson's Shakespeare, Werner's Readings and Recitations, etc.

This department is open to all students in the Collegiate classes and to the second year students of the preparatory school. Twice a week for each class.

# ENGLISH AND MODERN LANGUAGES.

R. H. WILLIS, Professor.
IDA PACE, Associate Professor.
CLARA EARLE, Instructor.

## ENGLISH.

1. *English Language and Literature* ..... ..... ...3

(*a*) Meiklejohn's English Language: eight essays (chiefly narrative and descriptive) criticised and corrected by the instructor and copied by the student: thorough drill in English metres. For reference: Baskerville and Sewell's Grammar, Lounsbury's History of the English Language. *Twice a week.*

(*b*) Meiklejohn's History of English Literature, with extensive parallel readings from more than twenty leading authors, and reports on same in class. For reference: Pancoast's English Literature, Shaw and others. *Once a week.*

*Miss Pace and Miss Earle.*

Required of all Freshmen.

2. *Prose Style and American Literature*..... .... ..... ..3

(*a*) Study of standard prose, with rhetorical analysis and criticism. For 1897-98 the selections are from Hawthorne, Thackeray, Macaulay, DeQuincey, Scott, Johnson, Steele, Milton; three essays. Text-books: Garnett's English Prose and other texts, with the instructor's notes. For topical study: Genung's Rhetoric. For reference: Minto, Pancoast, Shaw and others. *Twice a week.*

(*b*) Watkins' American Literature, with parallel readings from leading American authors, and class reports. For reference: Hawthorne and Lemon, Manly, Richardson. *Once a week.*

*Miss Pace.*

In 1898-99 the prose selections for (*a*) will be from Irving, Ruskin, Carlyle, Burke, Goldsmith, Swift, Addison, Bacon. This part of Course 2 may be taken for two consecutive years.

Required of Sophomores in Courses I., II., III., IV., VII., in Electrical Engineering, and in Normal Course.

3. (*a*) *The Classic School of Poets* .. ..... ... ..... .....2

FIRST TERM.—A critical study of representative poets (especially Dryden, Pope, and Gray) and of their master-

pieces, with parallel readings, reports in class, and essays. Text-books: Gosse's Literature of the Eighteenth Century, and topical studies from Hazlitt, Lowell, Taine, Ward, and others; critical editions of Dryden, Pope, Gray, and of other writers of this school.

*Miss Pace.*

[In 1898-99 *Victorian Literature.* Course 3 may be taken for two consecutive years.]

Required of Juniors in Course II.

3. (*b*) *Poets of the Romantic Movement*..... 2

SECOND TERM—Critical study of masterpieces, with reference to the characteristics of the romantic school and the causes which produced it; parallel readings, reports, and essays. Text-books: Gosse's Eighteenth Century; Oliphant's Eighteenth and Nineteenth Centuries; topics from Carlyle, Hazlitt, Saintsbury, Shairp, and others; critical editions of Cowper, Burns, Coleridge, Scott, Byron, and other romantic writers.

*Miss Pace.*

[In 1898-99 *American Writers.* Course 3 may be taken for two consecutive years.]

Required of Juniors in Course II.

4. *Middle English and Early Modern English* 2

Literary history of period from Chaucer to Milton; reading of representative authors with historical, philological and literary criticism; three essays. Morris' Chaucer, Percival's Spencer, Cook's or Sprague's Milton, Sprague's plays of Shakespeare and the Arden edition, parallel readings from these authors. For reference: Bucknell, Coleridge, Dowden, Gervinus, Hazlitt, Hudson, Pollard, Saintsbury, Ulrici, and others.

*Professor Willis.*

Required of Juniors in Courses II. and IV.

5. *Anglo-Saxon and Middle English*..... 3

Readings from the Anglo-Saxon Gospels and Chronicles; selections from Alfred, Aelfric, Cædmon and later writers. Bright's Anglo-Saxon Grammar and Reader (120 pages translated); Morris's Specimens of Early English, Part I; Ten Brink's Old English Literature (selections). For reference: Cook's First Book in Old English, Cook's Sievers' Grammar of Old English, March's Anglo Saxon Grammar (syntax),

Skeat's Etymological Dictionary. Brooke's Early English Literature.

*Professor Willis.*

Required of Seniors in Course II.

6. *English Philology* ..... 1

Champneys' English Language with parallel readings and lectures. For reference and topical study: Skeat's Principles of English Etymology, Sweet's Grammar (historical part), Earle, Emerson, Henry, Morris, Peile and others.

*Professor Willis.*

Required of Seniors in Courses I., II., and IV.

## GERMAN.

1. *Modern German, Elementary* ..... 3

Thomas's Grammar with composition; Brandt's Reader (160 pages); three lyric gems memorized.

*Professor Willis.*

Required of Juniors in Courses II. and III.; alternative with French or Spanish in other courses. Students are advised not to elect this course unless they intend to take another year of German.

2. *Schiller and Recent Authors* ..... 3

Schiller's Maria Stuart; Heine's Harzreise; Heyse's L'Arrabiata; Hillern's Höher als die Kirche; Bernhardt's Deutsche Litteraturgeschichte; grammar and composition continued; original composition.

*Miss Pace.*

Required of Seniors in Course II.

3. *Lessing and Goethe* ..... 2

Lessing's Minna von Barnhelm; Goethe's Meisterwerke. For reference in 2 and 3: Scherer's German Literature; Whitney's and Brandt's Grammars; Behaghel's Historical Grammar; Lyerman's Syntax. Dictionaries: Fluegel, Thieme Preusser, Classic, Heath, or Adler (Quarto).

*Professor Willis.*

Required of Seniors in Course II.

4. *German at Sight and Conversation* ..... 2

Meissner's Aus Meiner Welt; Leander's Träumereien; Benedix's Plautus and Terence, and Sonntagsjäger; Riehl's Burg Neideck; Worman's First and Second Books.

*Professor Willis.*

Required of Seniors in Course II.

5. *Scientific German* ..... 1

Dippold's Scientific German Reader and other selections from German scientists.

*Miss Pace.*

Elective for Scientific Students.

NOTE. – 2, 3 and 4 have different readings in 1898-99, and each may be taken for two consecutive year .

## FRENCH.

1. *Modern French, Elementary* ..... 3

Edgren's Grammar with composition: Rollins's Reader, containing simple prose tales, some extended selections from recent French authors, and a few lyrics from Victor Hugo, Béranger, Gautier, and other poets.

*Miss Earle.*

Required of Freshmen in Courses II. and III.

2. *Nineteenth Century Literature* ..... 2

Merimée's Chronique de Charles IX.; Labiche et Martin's Voyage de M. Perrichon; Erckmann-Chatrian's Waterloo; Victor Hugo's La Chute; Duval's Littérature Francaise; grammar and composition continued. For reference in 2 and 3: Whitney's Grammar; Harrison's French Syntax; Brachet's Historical Grammar; Saintsbury's History of French Literature and other larger works. Dictionaries: Spier's and Surenne's Quarto, Heath's, The Classic.

*Miss Earle.*

Required of Sophomores in Course II.

3. *The French Classic Drama* ..... 3

Critical study of representative authors; Corneille's Cinna; Racine's Andromaque; Molière's Les Femmes Savantes and Le Malade Imaginaire; grammar and composition continued; original composition; Duval's Littérature.

*Miss Pace.*

Required of Juniors in Course II.

4. *French at Sight and Conversation* ..... 2

Jules Verne's Expédition de la Jeune Hardi; Legouvé et Labiche's Cigale chez les Fourmis; Gautier's Voyage en Espagne; De Vigny's Le Cachet Rouge; Fontaine's Lecture et Conversation.

*Miss Pace.*

Required of Sophomores in Course II.

5. *Scientific French* ..... 1

Herdler's Scientific French Reader and other selections from French scientists.

*Miss Earle.*

For Sophomores or Juniors in Science.

NOTE—2, 3 and 4 have different readings in 1897-98, and each may be taken for two consecutive years.

## SPANISH.

1. *Modern Spanish, Elementary* ..... 3

Edgren's Spanish Grammar with composition; Worman's First Spanish Book; Knapp's Spanish Readings, containing extracts from Fernan Caballero, Selgas, Lafuente, Valera and other authors.

*Professor* ———.

Elective for Sophomores.

Allowed as a substitute for French 3. Ordinarily this class will not be formed for less than five students.

2. *The Spanish Classic Writers* ..... 3

Selections from Don Quixote; Lope's La Discreta Enamorada; Calderon's La Vida es Sueño, and El Alcalde de Zalamea; Conant's Spanish Literature: grammar and original composition. For reference: Knapp's Grammar; Sismondi's Literature; Clarke's Spanish Literature; Velasquez's Quarto Dictionary.

*Professor Willis.*

Elective for students who have passed Spanish 1.

3. *Spanish at Sight and Conversation* ..... 2

Valera's El Pajaro Verde; Larra's Partir á Tiempo; Moreto's El Desden con El Desden; Herrero's La Independencia; Worman's Second Book.

*Professor Willis.*

Required with Spanish 2.

## ITALIAN.

1. *Elementary Course* ..... 3

Grandgent's Grammar with composition; Italian Principia II (readings from standard authors selected for beginners); Sonzogno's Letteratura Italiana.

Allowed as a substitute for French 3, but will not be taught for less than five students.

2. *Advanced Course* ..... 3

Nota's La Fiera; Ongaro's Rosa dell' Alpi; De Amicis' Camilla; Tasso's Gerusalemme Liberata; grammar and composition continued. For reference: Cuore's Grammar; Sismondi's Literature. Dictionary: Millhouse or Baretti.

Elective for students who have passed Italian 1.

## GEOLOGY.

A. H. PURDUE, Associate Professor.

In arranging the courses in Geology, an attempt has been made to meet the needs of those students who wish to become well grounded in the elements of both the scientific and the practical phases of the subject, and at the same time of those who wish only a brief general culture course. The course meeting the latter need is number 2. While the other courses are offered specially for those making Geology a major, they can be taken with advantage by any one who has had Course 2.

1. *Physiography* ..... 2

Recitations two hours a week through the year, with special attention to Meteorology. Texts: Tarr, Waldo, Ferrel, and others.

Required of Freshmen in Course VII.

2. *General Geology* ..... 3

Recitations and lectures three times a week during the first term. Structural, Dynamic, and Surface Geology. Text: Geikie's Class Book of Geology.

Required of Juniors in Course VI. and in Civil Engineering, and of Sophomores in Course VII.

3. *Continental Evolution* ..... 3

Twelve lectures, three hours a week during the second term, on the evolution of the North American continent, to be followed by Course 4. Open to all students who have had Course 2.

Required of Juniors in Course VI., and of Sophomores in Course VII.

4. *Economic Geology* ..... 3
Lectures three times a week, following Course 3, on the formation, occurrence, uses, and geographic distribution of ore deposits. Open to all students who have had Course 2.
Required of Juniors in Course VI., and of Sophomores in Course VII.

5. *Practical Geology* ..... 1
Field and laboratory work two hours a week throughout the year, with the construction of geological maps and sections, topographic maps, and relief maps.
Required of Juniors in Course VII., and in Civil Engineering.

6. *Paleontology* ..... 2
Laboratory work, two to four hours a week throughout the year, on the determination of fossil organisms.
Required of Juniors in Course VII.

7. *Crystallography and Mineralogy* ..... 2
(*a*) Lecture two hours a week during the first term on the elements of Geometrical Crystallography. Text: Williams' Elements of Crystallography.
(*b*) Laboratory work (two hours) twice a week during the second term. Determination of minerals before the blowpipe, and in the wet way. Text: Determinative Mineralogy, Brush.
Required of Seniors in Course VII., and in Civil Engineering.

8. *Field and Special Courses.*
Students electing Geology as a major will be expected to spend sufficient time in the field for the careful investigation of local geological problems, and to present acceptable theses on the work done. It is advised that the field work be done in connection with the University Geological and Biological Survey. (See page 31.) Special courses will be arranged for those who wish to elect work in addition to what is required.
Required of Seniors in Course VII.

## HISTORY AND PEDAGOGICS.

J. F. Howell, Professor.

### HISTORY.

1. *Constitutional History* ..... 2
Text book: Fiske's Civil Government; lectures and reading.
Required of Freshmen in Course IV., and in the Normal Course.

2. *General History* ..... 3

Text-book: Myer's General History; collateral reading.
Required of Sophomores in Courses II., IV., and VI., and in the Normal Course.

3. *English History* ..... 1

Text-book: Montgomery's English History.
Required of Sophomores in Courses II. and IV., and of Freshmen in Courses II. and III.

4. *Ancient History* ..... 2

In the light of recent discoveries and investigations: Egypt and Israel; Greece and Rome. Lectures and recitations on assigned topics.
Required of Juniors in Course IV.

5. *Ecclesiastical History* ..... 2

Outlines of church history from the rise of Christianity to the present time; lectures and recitations on assigned reading.
Elective for Seniors and Juniors who have passed in Course II.

6. *European History* ..... 2

From the fall of Rome to the present time. Lectures, recitations on assigned reading, and topical research. Text-book, first term: Emerton's Introduction to the Middle Ages.
Elective for Seniors and Juniors who have passed in 2; required of Seniors in Course IV.

7. *American History* ..... 2

From the earliest explorations to the present time. Lectures, recitations on assigned periods, and topical research.
Required of Seniors in Course IV.

## PEDAGOGICS.

1. *Pedagogy* ..... 2

Text-book: White's Elements of Pedagogy, with lectures and collateral reading; methods.
Required of Freshmen in the Normal Course.

2. *School Management* ..... 3

Three times a week first term. Text-book: Tompkin's School Management, and collateral reading.
Required of Sophomores in Normal Course.

3. *History of Education* ..... 2

Twice a week, second term. Text-book: Painter's History of Education, with collateral reading.
Required of Sophomores in the Normal Course.

4. *School Law* ..... 1

Once a week, second term. Decisions of State Supreme Courts on questions relating to the rights and duties of school officers, parents and children; the School Laws of Arkansas. Text-books: Burke, The Law of Public Schools, and the text of the Arkansas school laws.
Required of Sophomores in the Normal Course.

5. *Science of Education* ..... 2

Twice a week, first term. Text-book: Palmer's Science of Education.
Elective for Juniors and Seniors.

6. *Philosophy of Education* ..... 2

Twice a week, second term. Text-book: Rosenkranz's Philosophy of Education.
Elective for Juniors and Seniors.

## MATHEMATICS, ASTRONOMY AND LOGIC.

HARRISON RANDOLPH, Professor.
G. W. DROKE, Associate Professor.

The following courses of instruction are offered by the Mathematical Department:

### I. ELEMENTARY MATHEMATICS.

1. *Algebra* ..... 2

Beginning with simultaneous quadratic equations, through theory of logarithms, binomial theorem, indeterminate coefficients and theory of numbers. Text-book: Wentworth's Higher Algebra.

*Professor Randolph,*
*Associate Professor Droke.*

Required of all Freshmen.

2. *Plane and Solid Geometry, Elementary Trigonometry* ..... 3

A large proportion of the time is devoted to geometrical analysis, with exercises for original solution. Text-books: Wentworth's Geometry, Bowser's Trigonometry.

*Professor Randolph,*
*Associate Professor Droke.*

Required of all Freshmen.

II. ELEMENTARY MATHEMATICS.

3. *Plane and Spherical Trigonometry, Analytic Geometry of Two Dimensions* ..... 5

First Term—Text-books: Bowser's Trigonometry, Puckle's Conic Sections.

*Professor Randolph.*

Required of Sophomores in Course III., and of Sophomore Engineering students.

4. *Analytic Geometry of Two Dimensions, Differential Calculus* ..... 5

Second Term—Text-books: Puckle's Conic Sections, Osborne's Calculus.

*Professor Randolph.*

Required of Sophomores in Course III., and of Sophomore Engineering students.

III. INTRODUCTORY TO HIGHER MATHEMATICS.

5. *Differential and Integral Calculus* ..... 3

An elaborate study of the differential and integral calculus, with applications to problems of geometry and mechanics, based on Todhunter's Treatises on Differential and Integral Calculus.

*Associate Professor Droke.*

Required of Juniors in Course III., and of Junior Engineering students.

6. *Determinants and Higher Algebra* ..... 2

First Term—Peck's Determinants.

*Associate Professor Droke.*

Required of Juniors in Course III.

7. *Differential Equations* ..... 2

Second Term—Osborne's Differential Equations, supplemented by lectures.

*Professor Randolph.*

Required of Juniors in Course III.

## IV. SENIOR COURSES.

8. *Analytic Geometry of Three Dimensions* ..... 4

FIRST TERM—C. Smith's Solid Geometry.

*Professor Randolph.*

Required of Seniors in Course III.

9. *Theory of Equations. Differential Equations* ... 4

SECOND TERM—Burnside and Panton's Theory of Equations. Johnson's Ordinary and Partial Differential Equations.

*Professor Randolph.*

Required of Seniors in Course III.

## V. ADVANCED COURSES.

10. *Theory of Surfaces.*

This course is a continuation of Course 8. General theory of twisted curves and surfaces, including curvature, lines of curvature and allied subjects in differential geometry.

*Professor Randolph.*

11. *Modern Synthetic Geometry.*

For reference: Richardson and Ramsey.

*Associate Professor Droke.*

Elective.

12. *Differential Equations.*

This course is a continuation of Course 9. For reference: Forsyth's Differential Equations.

*Professor Randolph.*

13. *Modern Analytic Geometry.*

*Associate Professor Droke.*

Elective.

14. *Theory of Substitutions.*

*Professor Randolph.*

15. *Analytical Mechanics.*

Statics, dynamics, and elements of the theory of the potential. Routh's Analytical Statics, Vols. I and II. Williamson's Dynamics. Prerequisite: Analytical Geometry and a thor-

ough knowledge of Differential and Integral Calculus: *i. e.* Courses 4, 5, and 8.

*Professor Randolph.*

### ASTRONOMY.

1. *Descriptive Astronomy* ..... 3

SECOND TERM—Text-book: Young.

*Associate Professor Droke.*

Elective.

### LOGIC.

1. *Deductive and Inductive Logic* ..... 2

FIRST TERM—Text-books: Davis' Elements of Deductive Logic, and Elements of Inductive Logic.

*Professor Randolph.*

Required of Juniors in Course IV.

## MECHANICAL AND CIVIL ENGINEERING.

GEORGE M. PEEK, Mechanical Engineering, Superintendent Mechanic Arts.

J. J. KNOCH, Civil Engineering.

MACK MARTIN, Machine Shop. Assistant Superintendent Mechanic Arts.

B. N. WILSON, Wood Shop.

————, Forging and Founding.

C. S. DUGGANS, Engineer.

### MECHANICAL ENGINEERING. (M. E.)

1. *Shop Work.*

(*a*): *Woodworking.* Principles of carpentry and joinery; wood turning; pattern making; cabinet work. Sickle's exercises in wood turning. One year, eight hours per week.

*Mr. Wilson.*

(*b*): *Founding.* Moulding; melting and pouring brass and iron; management of cupola. Bolland's Iron Founding. Half year, eight hours per week.

*Mr.* ————————

(*c*): *Forging.* Management of fire; drawing; welding; riveting and tempering. Half year, eight hours per week.

*Mr.* ————————

(*b*): *Machine Work.* Chipping and filing; turning; planing; milling; drilling; grinding; erection of machinery and millwrighting. Rose's Complete Practical Machinist. One year, eight hours per week.

*Mr. Martin.*

(*c*): *Stationary Engineering.* Steam fitting; cleaning and firing boilers; management of high speed and Corliss engines. Half year, four hours per week.

*Mr. Duggans.*

2. *Mechanical Drawing.*

(*a*): *Freehand.* Outline drawing from models and machine parts; plans, elevations, sections, lettering, etc. One year, two hours per week.

*Mr. Wilson.*

(*b*): *Instruments.* Use and care of instruments; copying drawings; making sketches of parts of machinery and making drawings from the sketches. One year, two hours per week.

*Mr. Wilson.*

(*c*): *Practical Drawing.* Working drawings; titles; tracing; preparing and using blue-print paper. One year, four hours per week.

*Mr. Wilson.*

3. *Instrumental Drawing* ..... 2

Drawing of geometrical problems, machine parts, line shading, etc. One year, four hours per week.

*Mr. [illegible]*

4. *Elements of Mechanism* ..... 2

Two hours per week, first term. Theory of motion and velocity ratios; designs of gear wheels, cams, link motions, trains of mechanism. Text-book: Stahl and Wood's Elements of Mechanism.

*Professor Peek.*

Required of Juniors in Mechanical and Electrical Engineering.

5. *Valve Gears* ..... 3

Three hours per week, part of first term. An analytical and graphical treatment of the plain slide valve, shifting eccentrics, link motions, radial, double and drop cut-off valve gears. Text-book: Peabody's Valve Gears.

*Professor Peek.*

Required of Juniors in Mechanical Engineering.

6. *Indicator Practice* ..... 3

Methods of using the steam engine indicator in determining horse power, setting valves and adjusting the governors. Three hours per week part of first term.

*Professor Peek.*

Required of Juniors in Mechanical Engineering.

7. *Drawing: Machine Design*..... 2

A practical study of velocity ratios in mechanism, gears, cams, link work, fastenings, belt and rope gearing. Four hours a week through the year.

*Professor Peek.*

Required of Juniors in Mechanical Engineering.

8. *Drawing: Steam Engine and Boiler Design* . 2

A course in the study and design of boilers and steam engine parts, such as pistons, cross-heads, frames, main bearings, fly wheels, valve gears and governors. Through the year.

*Professor Peek.*

Required of Seniors in Mechanical Engineering.

9. *Steam Engine Design* ..... 3

Three hours per week part of first term. Determination of the proper proportions for cylinders, valves, pistons, rods, shafts, fly wheels, governors, etc.

*Professor Peek.*

Required of Seniors in Mechanical Engineering.

10. *Mechanical Laboratory* ..... 2

Study of processes of blue printing and photography; gas analysis; calorific power of fuels; friction of belting; tests of lubricants; calibration of thermometers, gauges and indicators; planimeters and indicator cards. Engine and boiler trials.

*Professor Peek.*

Required of Juniors in Mechanical Engineering.

11. *Steam Engineering*..... 3

Three times a week, second term. Elementary thermodynamics; types of simple and compound engines; valve diagrams and indicator cards; heat and combustion of fuels; types and care of boilers. Text, Whitham.

*Professor Peek.*

Required of Juniors in Engineering Courses.

12. *Statics and Dynamics* ..... 4

Four hours per week part of second term. Forces; statics of a material point, of a rigid body, of a flexible cord; motion of a material point; moment of inertia; dynamics of a rigid body; work, energy and power; friction. Text-book: Church's Mechanics of Engineering.

*Professor Peek.*

Required of Juniors in Engineering Courses.

13. *Strength of Materials* ..... 4

Four hours per week, part of first and second terms. Elementary stresses and strains, tension, compression, shearing, torsion, flexure of homogeneous prisms, continuous girders; flexure of long columns. Text book: Church's Mechanics of Engineering.

*Professor Peek.*

Required of Seniors and Juniors in Engineering Courses.

14. *Hydraulics* ..... 4

Four hours per week, first term. Fluid pressure; pressure in tanks and reservoirs; flotation; gaseous fluids; flow of liquids through pipes and orifices; dynamics of gaseous fluids; impulse and resistance of fluids. Text-book: Church's Mechanics of Engineering.

*Professor Peek.*

Required of Seniors in Engineering Courses.

15. *Graphics* ..... 1

Lectures. One hour per week, first term. Graphical arithmetic; force diagrams; moment of inertia; stresses in trusses and mechanism; graphical dynamics.

*Professor Peek.*

Required of Seniors in Mechanical Engineering.

16. *Mechanical Refrigeration* ..... 3

Three hours per week, part of second term. Study of fluids available; machinery and apparatus used in compression, and absorption systems; methods of freezing, cold storage; refrigeration from central stations. Lectures, recitations, and prescribed reading.

*Professor Peek.*

Required of Seniors in Mechanical Engineering.

17. *Heating and Ventilating* ..... 3

Three hours per week, part of second term. Principles of

ventilation, systems of heating, piping, radiators, boilers, forced-blast systems, specifications.

*Professor Peek.*

Required of Seniors in Mechanical Engineering.

18. *Pumping Machinery* ..... 3

Three hours per week, part of second term. Design, construction, and operation of pumps and pumping machinery, with special reference to waterworks service. Text-book: Barr's Pumping Machinery.

*Professor Peek.*

Required of Seniors in Engineering Courses.

19. *Turbines* ..... 3

Three hours per week, part of second term. Action of a jet of water on a moving vane; impulse and reaction wheels; modern turbine, form, efficiency, and methods of regulation. Text book: Trowbridge's Turbine Wheels; Wood's Reaction Motors; Lectures.

*Professor Peek.*

Required of Seniors in Engineering Courses.

20. (*a*) *Locomotive Mechanism* ..... 3

Three hours per week, first term. A study of locomotive boilers, cylinders, frames; valve motion and valve setting; various systems of compound locomotives; air brakes. Text-book: Forney's Catechism of the Locomotive Mechanism.

*Professor Peek.*

Required of Seniors in Mechanical Engineering.

20. (*b*) *Marine Engines* ..... 3

Three hours per week, second term. A study of marine engines, boilers, valve gear, shafting, propellers, etc.

*Professor Peek.*

Required of Seniors in Mechanical Engineering.

21. *Gas Engines* ..... 2

Two hours per week, second term. History and present types of gas and oil engines; explosion in a closed vessel; the gas engine cycle; efficiency and adaptation of the gas engine. Text-book: Robinson's Gas and Petroleum Engine.

*Professor Peek.*

Required of Seniors in Mechanical Engineering.

## CIVIL ENGINEERING. (C. E.)

J. J. KNOCH, Associate Professor.

1. *Descriptive Geometry* ..... 2

Recitation and practice two hours per week throughout the year. Text-book: Church's Descriptive Geometry.
Required of Sophomores in Engineering Courses.

2. *Surveying* ..... 3

First and part of second term. Care, use and adjustment of instruments; use of chain, tape, compass, transit, solar attachment, level, sextant and plane table; land surveying, levelling, contouring, laws and instructions relating to surveys of the public domain. Text-book: Carhart's Surveying.
Required of Sophomores in Engineering and Geological Courses.

3. *Field Practice* ..... 3

Exercises in land, city, and topographical surveying.
Required of Sophomores in Engineering and Geological courses.

4. *Highways* ..... 1

One hour per week, second term. The location, construction, and maintenance of common, Macadam, and Telford roads; brick, stone, wood and asphalt pavements for city streets. Text-book: Spalding's Roads, Streets and Pavements.
Required of Sophomores in Civil Engineering.

5. *Railroad Engineering* ..... 2

Three hours per week first term, two hours second term. Preliminary surveys and location; transition curves, yards and turnouts; estimates of earthwork and material used in construction; the economics of railway location and management. Text-book: Searle's Field Engineering, and Crandall's Transition Curve and Earthwork Computations, first term; Wellington's Economic Theory of Railway Location, second term.
Required of Juniors in Civil Engineering.

6. *Field Practice* ..... 2

Location of curves, turnouts, and Y's; measurement of embankments and cuts, and computation of volumes.
Required of Juniors in Civil Engineering.

7. *Railroad Survey* ..... 12

One week, twelve hours per day. Actual field practice in reconnoissance, preliminary survey and location.
Required of Juniors and Seniors in Civil Engineering.

8. (*a*) *Drawing* ..... 2

First term. Lettering, shading and line drawing; pen and colored topography.
Required of Sophomores in Civil Engineering.

8. (*b*) *Maps* ..... 2

Second term. Topographical and railroad maps from actual surveys.
Required of Juniors in Civil Engineering.

9. *Masonry Construction* ..... 2

Two hours per week, second term. Use of lime and hydraulic cement mortars; stone and brick masonry foundations; foundations in soft materials on land and under water; coffer-dams, cribs and caissons. Text-book: Baker's Masonry Construction.
Required of Juniors in Civil and Mechanical Engineering.

10. *Mining Engineering* ..... 1

Lectures one hour per week, first term. Mine surveying, blasting, timbering and winning deposits; ventilation, hygiene and mining law.
Required of Juniors in Civil Engineering.

11. *Roofs and Bridges* ..... 3

Four hours per week, first term; two hours second term. Theory of computation of stresses by both analytical and graphic methods; full computations, designs and bills of material for a roof truss and railroad bridge. Text-books: Merriman and Jacoby's Roofs and Bridges, Parts I. and II.
Required of Seniors in Civil Engineering.

12. *Sanitary Engineering* ..... 2

Two hours per week, first term. Calculation and special details of construction of sewers, separate and combined systems of sewerage; purification of sewage; municipal and domestic sanitation. Text-book: Baumeister's Cleaning and Sewerage of Cities.
Required of Seniors in Civil Engineering.

13. *Stereotomy and Drawing* ..... 2

Two hours per week, first term. Right and oblique arches; cloisters and domes; isometric projections and drawings for templet patterns; stone cutting. Text-book: Warren's Stone Cutting.

Required of Seniors in Civil Engineering.

14. *Arches and Dams* ..... 2

Two hours per week, part of first term. Theory of the equilibrium of arches and stability of masonry dams, by both analytical and graphic methods; drawings for complete designs. Text-book: Baker's Masonry Construction.

Required of Seniors in Civil Engineering.

15. *Waterworks Engineering* ..... 3

Three hours per week, second term. Study of systems of water supply; collection, purification and distribution of water; location of waterworks, with details of estimate of cost. Text-book: Fanning's Hydraulic and Water Supply Engineering.

Required of Seniors in Civil Engineering.

16. *Engineering Laboratory* ..... 2

Two hours per week, first and second terms. Test of strength and other properties of materials of construction; tensile and crushing tests of brick, stone and cement; flow of water through pipes, elbows, valves, and measurement by means of weirs.

*Professor Peek and Associate Professor Knoch.*

Required of Seniors in Civil and Mechanical Engineering, first and second terms; of Seniors in Electrical Engineering, first term.

17. *Field Practice* ..... 2

Two hours per week, first and second terms. Topographical survey, triangulation and levelling.

Required of Seniors in Civil Engineering.

18. *Drawing* ..... 2

Two hours per week, second term. Structural details; working drawings for designs.

Required of Seniors in Civil Engineering.

## MILITARY SCIENCE AND TACTICS.

FIRST LIEUTENANT ELIAS CHANDLER,
Sixteenth U. S. Infantry, Professor.

1. *Practical Work* . . . . . 3
Three hours per week. In school of the soldier, squad, platoon, company, and battalion, close and extended order; ceremonies of guard mounting, dress parade, inspection and review; camping, guard duty, target practice, laying out field works, and signaling. In this work, the cadet officers act as instructors, thus putting into practice the knowledge gained in previous years.
Required of all male students over 15 years of age.

2. *Recitations and Lectures* . . . . . 1
One hour per week. Infantry Drill Regulations U. S. Army, Part I.). Manual of Guard Duty (U. S. Army).
Required of all male Freshmen.

3. *Recitations and Lectures* . . . . . 1
One hour per week. Infantry Drill Regulations U. S. Army, Part II.). Small Arms Firing Regulations (Blunt).
Required of all male Sophomores.

4. *Recitations and Lectures* . . . . . 1
One hour per week. Military Field Engineering (Beach). Military Signaling (United States Army Signal Code).
Required of all male Juniors.

5. *Recitations and Lectures* . . . . . 1
One hour per week. Service of Security and Information (Wagner). Military Law (Winthrop).
Required of all male Seniors.

## MUSIC.

### I. PIANOFORTE, HARMONY, AND MUSICAL HISTORY.

MISS ANNA LAIRD.

*First Year.*

Theoretical Rudiments; Graded Materials for Study, W. S. B. Matthews; Kohler's Etudes, Op. 50; MacDougall's Melody Playing; thirty selected studies from Heller; Mason's Technics.

*Second Year.*

Matthew's Phrasing and Interpretation; Loeschhorn's Etudes, Op. 66 and 67; Bach's Lighter Pieces; LeCouppey's Op. 20; Krause's Trill Studies, Op. 2; Doring's Op. 24; Mason's Technics; selections from Mozart, Schumann, Mendelssohn, and the best modern composers.

*Third Year.*

Harmony and History of Music; Heller's Art of Phrasing; Cramer's Select Studies—Von Bulow Edition; Bach's Inventions; Selected Octave Studies; Haberbier's Etude Poesies, Op. 53; Clementi's Gradus ad Parnassum; Mason's Technics; selections from Haydn, Beethoven, Schubert, Schumann, Chopin and the best European and American composers.

*Fourth Year.*

Analytical study of the principal works of the great masters.

Chopin's Op. 10 and 25; Bach's Preludes and Fugues; Cramer's Selected Studies; Moscheles' Op. 70; Kullak's Octave Studies; Kessler's Op. 20; Schumann's Etudes; Mason's School of Octaves, and Bravura.

The aim of this course is the development of a higher degree of technique, interpretation, and general musical intelligence to make musicians as well as performers.

Classes in Normal training will be formed for those who wish to become teachers of music.

## II. VOICE CULTURE AND VOCAL MUSIC.

Miss Gertrude Crawford.

True cultivation of the voice consists in the development of pure tone, and its easy, natural use and control in singing.

Attention is given to respiration as an art applicable to singing; position of mouth and tongue, and control of the face in singing; emission of voice on vowels; exercises for uniting the registers; practice on sustained tones in the entire range of the voice; exercises in agility and velocity; exercises in articu-

lation of consonants and vowels; study of delivery and expression; the formation of good style, etc.

Garcia's Vocal Exercises, Concone, Bordogni, Marchesi, Panseron, and other technical works; songs of the English, Italian, French and German Schools; church music; study of opera and oratorio.

TERMS.

| | |
|---|---|
| 18 weeks, two lessons per week, Pianoforte and Voice Culture, each | $22.50 |
| Harmony in class | 5.00 |
| Use of pianoforte for practice | 2.50 |

Tuition payable in advance.

No deduction will be made except in case of prolonged illness.

Instruction in Guitar and Mandolin playing given.

## PSYCHOLOGY AND ETHICS.

PRESIDENT BUCHANAN.

The course offered in these subjects consists of recitations, lectures, and full and free discussions by the members of the class. In connection with a careful examination of the views and opinions of leading thinkers, students are encouraged to study their own mental phenomena and to subject to the test of individual consciousness the various theories which come under investigation. Due attention is given to the recognized contributions of modern Physiology to Psychology. As introductory to this part of the subject, the Professor of Biology gives a course of lectures with accompanying laboratory work in Neurology, which all students whose course includes

Psychology, are required to attend during a part of the second term of the Junior year.

1. *Psychology* ..... 3

Three times a week, first term.
Required of Seniors in Course IV.

2. *Ethics* ..... 2

Twice a week, second term.
Required of Seniors in Course IV.

3. *Political Economy* ..... 2

Lectures and recitations twice a week. Attention is specially directed to the leading questions of the day, such as public finance, tariff, railway, and other corporate industries, etc.
Required of Juniors in Course IV.

# COURSES FOR DEGREE OF BACHELOR OF ARTS (B. A.).

A student may elect any one of seven courses, each having a leading or major subject of study, and after choosing his course a number of studies are still left to his choice. Great freedom of election is thus secured. In each course there is a minimum requirement of one full year (five hours per week) in mathematics. In languages there must be, besides English, not less than four yearly courses (each three hours per week), one of which must be Latin. No preparatory studies can be counted here.

Students may thus give special attention to any ancient or modern language, to any branch of science, or to history. Each class has such practical work as the subject requires, and optional studies are allowed to a limited extent, if the student shows himself able to do more than the prescribed work.

An outline of the courses is shown opposite this page. For details concerning the studies mentioned, consult Departments of Instruction, beginning on page 54.

# COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS.

The figures immediately following each subject indicate the number of the courses; those at the right of each column indicate the number of hours per week.

| Major subject. | I. Ancient Languages. | II. Modern Languages. | III. Mathematics. | IV. History. | V. Chemistry. | VI. Zoology, (or Entomology.) | VII. Geology. |
|---|---|---|---|---|---|---|---|
| FRESHMAN. | Latin 1 ... 3<br>Greek 1 ... 4<br>Mathematics 1 ... 2<br>Mathematics 2 ... 3<br>English 1 ... 3 | Latin 1 ... 3<br>French 1 ... 3<br>Mathematics 1 ... 2<br>Mathematics 2 ... 3<br>English 1 ... 3<br>History 3 ... 1 | Latin 1 ... 3<br>French 1 ... 3<br>Mathematics 1 ... 2<br>Mathematics 2 ... 3<br>English 1 ... 3<br>History 3 ... 1 | Latin 1 ... 3<br>Mathematics 1 ... 2<br>Mathematics 2 ... 3<br>English 1 ... 3<br>History 1 ... 2<br>Elective ... 3 | Latin 1 ... 3<br>Mathematics 2 ... 3<br>English 1 ... 3<br>Physics 1 ... 3<br>Chemistry 1 ... 3 | Latin 1 ... 3<br>Mathematics 2 ... 3<br>English 1 ... 3<br>Physics 1 ... 3<br>Biology 1 ... 3 | Latin 1 ... 3<br>Mathematics 2 ... 3<br>English 1 ... 3<br>Geology 1 ... 2<br>Elective ... 4 |
| SOPHOMORE. | Latin 2 ... 3<br>Greek 2 ... 3<br>English 2 ... 3<br>Elective ... 6 | Latin 2 ... 3<br>French 2 and 4 ... 3<br>English 2 ... 3<br>History 2 ... 3<br>Elective ... 3 | Mathematics 3 and 4 ... 5<br>English 2 (*a*) ... 2<br>Physics 1 ... 3<br>Elective ... 5 | English 2 ... 3<br>History 2 ... 3<br>History 3 ... 1<br>Physics 1 or Chemistry 1 ... 3<br>Elective ... 6 | Modern Language ... 3<br>Chemistry 3 (*a*) 1st term ... 2<br>Chemistry 2, 2d term<br>Chemistry 3 (*b*) ... 3<br>Elective ... 7 | History 2 ... 3<br>Chemistry 1 ... 3<br>Botany 1 and 2 ... 3<br>Zoölogy 1 ... 3<br>Elective ... 3 | Modern Language ... 3<br>English 2 (*a*) ... 2<br>Chemistry 1 ... 3<br>Geology 2, 3, and 4 ... 3<br>Elective ... 4 |
| JUNIOR. | Latin 4 ... 2<br>Latin 5 ... 2<br>Greek 3 ... 3<br>English 4 ... 2<br>Elective ... 6 | English 3 ... 2<br>English 4 ... 2<br>German 1 ... 3<br>French 3, Spanish 1, or Italian 1 ... 3<br>Elective ... 6 | Mathematics 5 ... 3<br>Mathematics 6 and 7 ... 2<br>German 1 ... 3<br>Elective ... 7 | English 4 ... 2<br>History 4 ... 2<br>Political Economy 1 ... 2<br>Elective ... 10 | Modern Language ... 3<br>Chemistry 4 ... 3<br>Chemistry 5 ... 4<br>Elective ... 5 | Zoölogy 2 or Entomology 1 ... 3<br>Geology 2, 3, and 4 ... 3<br>Elective ... 10 | Modern Language ... 3<br>Chemistry 5 ... 3<br>Geology 5 ... 2<br>Geology 6 ... 2<br>Elective ... 5 |
| SENIOR. | Latin 6 and 7 or Greek 4 ... 3<br>English 6 ... 1<br>Elective ... 11 | English 5 ... 3<br>English 6 ... 1<br>German 2 ... 3<br>German 3 ... 2<br>German 4 ... 1<br>Elective ... 6 | Mathematics 8 and 9 ... 4<br>Elective ... 11 | English 6 ... 1<br>History 7 ... 2<br>History 8 ... 2<br>Psychology and Ethics ... 3<br>Elective ... 8 | Modern Language ... 3<br>Chemistry 7 ... 3<br>Chemistry 6 and 9 ... 4<br>Elective ... 5 | Zoölogy 4 and 5 or Entomology 2 ... 5<br>Elective ... 11 | Geology 7 ... 2<br>Geology 8 (Thesis) ... 2<br>Biology 1 ... 3<br>Elective ... 8 |
| | *Required:* French 1 or German 1, one course in Natural Science, one course in Physical Science. | *Required:* One course in Natural Science, one course in Physical Science. | *Required:* One course in Latin or in French or in German. | *Required:* Three courses in languages. | *Required:* Mathematics 1. | *Required:* Mathematics 1 and three courses in languages. | *Required:* Mathematics 1 and one course in a language. |

NOTE.—Courses V., VI., and VII. lead to the degree of BACHELOR OF SCIENCE, if a modern language be substituted for Latin 1.

# THE NORMAL COURSE.

Normal students must consult Professor Howell immediately after registration.

Section 6974 of the Revised Statutes of the State is as follows: "The State Superintendent of Public Instruction shall have power to grant State certificates, which shall be valid for life, unless revoked, to any person in the State who shall pass a thorough examination in all those branches required for granting county certificates, and also in algebra and geometry, physics, rhetoric, mental philosophy, history, Latin, the Constitution of the United States, and of the State of Arkansas, natural history, and the theory and art of teaching."

This course includes all the branches required for a State certificate in accordance with the law, and leads to the degree of Licentiate of Instruction (L. I.). After completing the Normal Course, students may take up in the Junior Class the work of any course for which they may be prepared, and compete for the corresponding degree.

FRESHMAN YEAR.

| | Hours per week. |
|---|---|
| Botany 1 (*Systematic Botany*) | 3 |
| English 1 (*Language and Literature*) | 3 |
| History 1 (*Constitutional History*) | 2 |
| Latin 1 (*Nepos, Cicero, and Virgil*) | 3 |
| Mathematics 1 (*Algebra*) | 2 |
| Mathematics 2 (*Geometry and Trigonometry*) | 3 |
| Pedagogics 1 | 2 |

SOPHOMORE YEAR.

| | |
|---|---|
| English 2 (*Prose Style, Literature*) | 3 |
| History 2 (*General History*) | 3 |
| Pedagogics, 2, 3 and 4 | 3 |
| Physics, 1 (*General Physics*) | 3 |
| Zoology 1 (*General Zoology*) | 3 |

# COURSES IN MECHANIC ARTS AND ENGINEERING.

**Students in this department must consult Professor Peek immediately after registration.**

GENERAL DESCRIPTION OF COURSES IN ENGINEERING.

*Mechanical Engineering* directs the design and construction of all forms of machines, and their installation in machine shops, mills and factories. It directs the design, construction, erection and operation of boilers, steam and gas engines, locomotives, turbines and other prime movers; of pumping machinery for waterworks; of machinery and apparatus for the manufacture of ice, the distribution of refrigeration from central stations, and the heating and ventilation of buildings. Since the utilization of the forces and materials of nature is accomplished in nearly all classes by machines, or by processes working through machinery, it is evident that Mechanical Engineering is the basis of all industries.

*Civil Engineering* embraces the location and construction of railroads, canals, waterworks, sewerage systems, foundations on land and in water, tunnels and superstructures; the surveys, improvements and defenses of coasts, harbors, rivers, and lakes; the application of Mechanics, Descriptive Geometry and Graphics to the design and construction of arch bridges, roofs, truss, and suspension bridges; the irrigation and drainage of lands, and the location and maintenance of public roads.

## ELECTRICAL ENGINEERING.

Two courses of instruction are offered. The four years course is intended to afford a good general education, and at the same time to so thoroughly ground the student in the principles of Electrical Engineering as to furnish a good foundation for the profession.

Theoretical and applied electricity and the mechanics of engineering are naturally the leading subjects.

Theory is amply treated and is tested by experiments in well equipped laboratories. This gives the student a degree of facility in the use of instruments and machines which is acquired only by continued practice. As a requisite for graduation, each candidate must present an acceptable thesis, embodying the results of special study. The subject of such study must lie within the field of Electrical Engineering. It must be announced not later than the beginning of the second term of the senior year, and must be approved by the professor in charge. The completed thesis must be submitted not later than two weeks before commencement day, and one copy must be deposited in the library as the property of the University.

The short course of two years is designed for students lacking time and preparation for the full course, and is especially intended for those students who have had some practical experience in engineering. The work is more elementary than in the long course, and embraces only the Mathematics, Physics, Electrical Engineering, and laboratory instruction

needed for practical work. It thus prepares students for operating or superintending lighting, power, or manufacturing plants. It does not lead to a degree, but a suitable certificate will be given on completion of the work.

## MECHANICAL ENGINEERING COURSE FOR DEGREE OF B. M. E.

| FRESHMAN YEAR. | Hours per Week 1st Term. | 2d Term. |
|---|---|---|
| Mathematics 2 (*Geometry and Plane Trigonometry*) | 3 | 3 |
| Mathematics 1 (*Algebra*) | 2 | 2 |
| Chemistry 1 (*General Chemistry*) | 3 | 3 |
| Physics 1 (*General Physics*) | 3 | 3 |
| English 1 (*English Language and Literature*) | 3 | 3 |
| M. E. 2c (*Drawing*) | 2 | 2 |
| M. E. 1, a, b (*Shop Work*) | 2 | 2 |
| Military Science | 1 | 1 |
| **SOPHOMORE YEAR.** | | |
| Mathematics 3, 4 | 5 | 5 |
| Physics 2 (*Electricity and Magnetism*) | 3 | 3 |
| C. E. 2, 3 (*Surveying and Field Practice*) | 3 | 3 |
| M. E. 3 (*Drawing*) | 2 | 2 |
| C. E. 1 (*Descriptive Geometry*) | 2 | 2 |
| M. E. 1, b, c (*Shop Work*) | 2 | 2 |
| Military Science | 1 | 1 |
| **JUNIOR YEAR.** | | |
| Mathematics 5 (*Calculus*) | 3 | 3 |
| Solid Analytical Geometry (*Optional*) | | 2 |
| M. E. 4 (*Elements of Mechanism*) | 2 | |
| M. E. 11 (*Steam Engineering*) | | 3 |
| M. E. 12, 13 (*Mechanics*) | | 5 |
| E. E. 7 (*Dynamo-Electric Machinery*) | 5 | |
| C. E. 9 (*Masonry Construction*) | 2 | |
| M. E. 7 (*Drawing and Machine Design*) | 2 | 2 |
| M. E. 10 (*Mechanical Laboratory*) | 1 | 1 |
| M. E. 1, c, d (*Shop Work*) | 2 | 2 |
| Military Science | 1 | 1 |

SENIOR YEAR.

| | | |
|---|---|---|
| M. E. 13, 14, 15 (*Mechanics*) | 5 | . |
| M. E. 9, 5, 6 (*Steam Engine Design*) | 3 | ... |
| Chemistry 7 (*Technical Chemistry*) | 3 | 3 |
| M. E. 20a, 20b (*Locomotives and Marine Engines*) or French 1, or German 1 | 3 | 3 |
| M. E. 16, 17 (*Heating, Ventilating and Refrigeration*) | .... | 3 |
| M. E. 18, 19 (*Hydraulic Machinery*) | .... | 3 |
| M. E. 21 (*Gas Engine*) | | 2 |
| C. E. 16 (*Engineering Laboratory*) | 2 | 2 |
| M. E. 8 (*Drawing*) | 2 | 2 |
| Military Science | 1 | 1 |
| Thesis | | |

CIVIL ENGINEERING COURSE FOR DEGREE OF B. C. E.

| FRESHMAN YEAR. | Hours per Week 1st Term. | 2d Term. |
|---|---|---|
| Mathematics 2 (*Geometry and Plane Trigonometry*) | 3 | 3 |
| Mathematics 1 (*Algebra*) | 2 | 2 |
| Chemistry 1 (*General Chemistry*) | 3 | 3 |
| Physics 1 (*General Physics*) | 3 | 3 |
| English 1 (*English Language and Literature*) | 3 | 3 |
| M. E. 2c (*Drawing*) | 2 | 2 |
| M. E. 1a, b (*Shop Work*) | 2 | 2 |

SOPHOMORE YEAR.

| | | |
|---|---|---|
| Mathematics 3, 4 | 5 | 5 |
| Physics 2 (*Electricity and Magnetism*) or French 1, or German 1 | 3 | 3 |
| C. E. 2, 3 (*Surveying and Field Practice*) | 3 | 3 |
| C. E. 8 (*Drawing*) | 2 | 2 |
| C. E. 1 (*Descriptive Geometry*) | 2 | 2 |
| C. E. 4 (*Highways*) | 1 | 1 |
| English 2 (*Prose Style and American Literature*) | 3 | 3 |
| or Physics 3 (*Physical Measurements*) | 2 | 2 |
| Military Science | 1 | 1 |

JUNIOR YEAR.

| | | |
|---|---|---|
| Mathematics 5 (*Calculus*) | 3 | 3 |
| M. E. 11 (*Steam Engineering*) | | 3 |
| Geology 2 (*General Geology*) | 3 | |
| Geology 5 (*Practical Geology*) | 1 | |

| | | |
|---|---|---|
| M. E. 12, 13 (*Mechanics*) | ... | 5 |
| C. E. 9 (*Masonry Construction*) | 2 | . . |
| C. E. 5 (*Railroad Engineering*) | 3 | 2 |
| C. E. 10 (*Mining Engineering*) | 1 | . |
| C. E. 6 (*Field Practice*) | 2 | 2 |
| C. E. 8a, 8b (*Drawing*) | 2 | 2 |
| Military Science | 1 | 1 |

SENIOR YEAR.

| | | |
|---|---|---|
| M. E. 13, 14 (*Mechanics*) | 4 | ... |
| M. E. 18, 19 (*Hydraulic Machinery*) | | 3 |
| C. E. 15 (*Waterworks Engineering*) | | 3 |
| C. E. 11 (*Roofs and Bridges*) | 4 | 2 |
| Geology 7 (*Mineralogy*) | | 3 |
| C. E. 12 (*Sanitary Engineering*) | 2 | |
| C. E. 13, 14, 18 (*Drawing and Stereotomy*) | 2 | 2 |
| C. E. 17 (*Field Practice*) | 2 | 2 |
| Military Science | 1 | 1 |
| Thesis | | |

## ELECTRICAL ENGINEERING COURSE FOR DEGREE OF B. E. E.

FRESHMAN YEAR.

| | Hours per Week. |
|---|---|
| Mathematics 1 and 2 (*Algebra, Geometry and Plane Trigonometry*) | 5 |
| English 1 (*English Language and Literature*) | 3 |
| Physics 1 (*General Physics*) | 3 |
| Chemistry 1 (*General Chemistry*) | 3 |
| M. E. 2c (*Mechanical Drawing*) | 2 |
| M. E. 1c and d (*Forging and Machinist Work*) | 2 |
| Military Science 2 | 1 |

SOPHOMORE YEAR.

| | |
|---|---|
| Mathematics 3, 4 (*Spherical Trigonometry, Analytical Geometry and Calculus*) | 5 |
| Physics 2 (*Electricity*) | 3 |
| English 2 (*Prose Style and American Literature*) | 3 |
| Physics 3 (*Physical Measurements*) or M. E. 1a and b (*Woodworking and Founding*) | 2 |
| C. E. 1 (*Descriptive Geometry*) | 2 |

| | |
|---|---|
| C. E. 2 and 3 (*Surveying and Field Practice*) | 3 |
| Military Science 3 | 1 |

JUNIOR YEAR.

| | Hours per Week 1st Term. | 2d Term. |
|---|---|---|
| Mathematics 5 (*Calculus*) | 3 | 3 |
| Mathematics 7 (*Differential Equations*) optional | | 2 |
| German 1 (*Modern German, Elementary or* / French 1 (*Modern French, Elementary*) | 3 | 3 |
| E. E. 7 and 8 (*Dynamo Electric Machinery and Theory of Alternate Currents*) | 5 | 2 |
| E. E. 5 (*Electrical Laboratory*) | 2 | 1 |
| E. E. 3 (*Technical Drawing*) | 2 | 1 |
| M. E. 4 and 11 (*Elements of Mechanisms and Steam Engineering*) | 2 | 3 |
| M. E. 12 and 13 (*Statics and Dynamics, Strength of Materials*) | | 5 |
| Military Science 4 | 1 | 1 |

SENIOR YEAR.

| | Hours per Week 1st Term. | 2d Term. |
|---|---|---|
| Chemistry 12 (*Metallurgy of Iron and Steel*) | 3 | |
| M. E. 13, 14 and 19 (*Strength of Materials, Hydraulics and Turbines*) | 4 | 3 |
| C. E. 16 (*Engineering Laboratory*) | 2 | |
| E. E. 9 (*Alternate Current Machinery*) | | 2 |
| E. E. 4 (*Technical Drawing*) | 2 | 2 |
| E. E. 12 and 14 (*Electrical Measurements and Photometry*) | 2 | 1 |
| E. E. 6 (*Electrical Laboratory*) | 2 | 2 |
| E. E. 13, 11 (*Electrical Design, Telegraphy, Telephony*) | 1 | 2 |
| E. E. 8 and 10 (*Theory of Alternate Currents and Electric Railways*) | 2 | 2 |
| E. E. 2 (*Contracts and Specifications*) | | 1 |
| Military Science 5 | 1 | 1 |
| French 5 (*Scientific French or* / German 5 (*Scientific German*) Optional | 1 | 1 |
| Thesis | | |

## SHORT COURSE IN ELECTRICAL ENGINEERING.

### FIRST YEAR.

| | Hours per Week. |
|---|---|
| Mathematics 1 and 2 (*Algebra, Geometry, Plane Trigonometry*) | 5 |
| Physics 1 and 2 (*General Physics and Electricity*) | 6 |
| M. E. 2c (*Mechanical Drawing*) | 2 |
| M. E. 1c and d (*Forging and Machinist Work*) | 2 |
| Military Science 2 | 1 |

### SECOND YEAR.

| | Hours per Week. 1st Term. | 2d Term. |
|---|---|---|
| Physics 3 (*Physical Measurements*) | 2 | 2 |
| M. E. 1e (*Engine and Boiler Management*) | 2 | 3 |
| C. E. 2 and 3 (*Surveying and Field Practice*) | 3 | 3 |
| E. E. 7 and 1 (*Dynamo, Electric Machinery and Management of Dynamos and Motors*) | 5 | 2 |
| E. E. 5 (*Electrical Laboratory*) | 1 | 1 |
| E. E. 3 (*Technical Drawing*) | 2 | 2 |
| E. E. 10 (*Electric Railways*) | | 2 |
| E. E. 2 (*Contracts and Specifications*) | | 1 |
| Military Science 3 | 1 | 1 |

# AGRICULTURAL COURSE.

The degree conferred for satisfactory completion of this course is Bachelor of Science in Agriculture. A two years' course is provided for students who can not remain to complete the full course.

The scientific methods and manipulations taught here will secure for Arkansas farmers far greater profits than the usual methods produce. In agriculture and in all subjects related to it, students are in daily association with advanced specialists, and have the benefit of their experiments. They have also the use of the library, museum and scientific specimens belonging to the United States Experiment Station.

Farm labor is not required of agricultural students, unless needed occasionally in illustrating the subjects taught in the lecture room.

FRESHMAN YEAR.

| | Hours per Week. |
|---|---|
| Mathematics 1 (*Algebra*) | 2 |
| Mathematics 2 (*General [illegible] and Plane Trigonometry*) | 5 |
| English 1 (*English Language and Literature*) | 3 |
| Chemistry 1 (*General Inorganic Chemistry*) | 3 |
| Botany 1 (*Systematic Botany*) | 3 |
| Agriculture 1 (*Soils*) | 2 |

SOPHOMORE YEAR.

| | |
|---|---|
| Physics 1 (*General Physics*) | 3 |
| English 2 (*[illegible]on [illegible] and Public Speaking*) | 3 |
| Agricultural Chemistry | 3 |
| Surveying | 3 |
| Horticulture 1 (*Practical Plant Growing*) | 3 |
| Agriculture 2 (*Farm Crops and Machinery*) | 2 |

JUNIOR YEAR.

| | |
|---|---|
| Geology 2, 3, and 4 | 3 |
| Anatomy and Physiology of Domestic Animals | 3 |
| Horticulture 2 (*Fruits and Landscape Gardening*) | 3 |
| Agriculture 3 (*Stock Breeding*) | 2 |
| Political Economy | 2 |
| Elective | 3 |

SENIOR YEAR.

| | |
|---|---|
| Psychology and Ethics | 3 |
| Bacteriology and Hygiene | 2 |
| Agricultural 4 (*Rural Economics*) | 2 |
| Meteorology | 2 |
| Horticulture 3 (*Forestry and Plant Breeding*) | 2 |
| Constitutional History | 2 |
| Elective | 3 |

# SCHEDULE OF COLLEGIATE RECITATIONS.

Figures to the left sh the term during which the subject is studied; those to the right show the number of the course.

| | 1. 8:45..... 9:45 | 2. 9:45 ..... 10:45 | 3. 10:4 .... 11:45 | 4. 11:45..... 12:45 | 5. 1.....2 | 6. 2.....3 | 7. 3.....4 | 8. 4.....5 |
|---|---|---|---|---|---|---|---|---|
| FRESHMAN. | Biology 1, W , F<br>Chemistry 1, M., F<br>Geology 1, T., Th<br>Latin 1, M., W., F<br>Mathematics 1, T., Th<br>Mathematics 2, M., W., F | French 1, T., Th , F<br>Latin 1, M., W., F<br>Mil. Science, M<br>Pedagogics 1, T., Th | French 1, T Th., F<br>Mathematici , T , Th<br>Mathematic M., W., F | English 1, M , W., F<br>Physics 1, T., Th<br>Physics 2, M., F | English 1, M., T., Th<br>English 1, F<br>History 3, W | English 1, M., W<br>French 1, T., Th., F<br>History 1, M., W | Greek 1, M., W., Th., F<br>Mil. Science, T | Drill, M., T , W. |
| | Biology 1, T<br>Physics 2, W<br>Physics 3, M., F | | | | | Chemistry 1, W<br>Physics 1, Th | | |
| SOPHOMORE. | English 2, M., W., F<br>French 4, T., Th<br>Pedagogics 2, 3 and 4, M., W., F | French 1, T., Th., F<br>French 2, M., W<br>Geology 2, 3 and 4, T., W., F<br>Latin 2, T., Th., F | French 1, T Th., F<br>Greek 2, T h., F<br>Mathematic and 4, M—F | 1 Chemistry 3a, M , T., Th<br>2 Chemistry 2, M , T., Th<br>English 2, M , W<br>Mil Science, F | English 2, F<br>French 5, W<br>History 2, M., T , Th<br>History 3, W | Botany 1, M<br>French 1, T., Th , F | Mil. Science, Th<br>Zoölogy 1, F | Drill, M., T., W. |
| | Botany 1 ar 2, T., Th<br>Zoölogy 1, , W | | | | | Chemistry 3b, M., T., W., Th | | |
| JUNIOR. | English 4, T., Th<br>Mil. Science, W<br>Zoölogy 2, M., Th | 2 Astronomy, T., Th<br>Entomology 1, F<br>German 1, M., W., F<br>1 Logic, T., Th | Chemistry 4 , Th., F<br>French 3, TTh , F<br>Greek, 3, TTh., F<br>Latin 4, M W | History 4, T., Th<br>Mathematics 5, M , W , F<br>Mathematics 6 & 7, T., Th | Frenc 5, W<br>Polit. Economy, M., W | Latin 5, T., Th | English 3, T., Th<br>Italian 1, M., W., F<br>Spanish 1, M., W., F | Drill, M., T., W. |
| | | | Zoölogy 2, F | | Entomology 1, M., W | Chemistry 5, M., T., W., Th<br>Geology 5, F<br>Geology 6, T | | |
| SENIOR. | Chemistry 7, T<br>German 3, M., W<br>Latin 6 and 7, M., W., F | Chemistry 7, F<br>German 4 T , Th<br>German 5, W<br>Greek 4, M., W<br>Metallurgy, M., T., Th<br>Zoölogy 4 and 5, M., Th | 2 Ethics, T.h<br>History 8, MW<br>1 Psychology , Th., F | Chemistry 7, Th<br>German 2, T., Th , F<br>Greek 4, F<br>Mil. Science, M | English 5, M , W , F<br>English 6, Th | 1 Geology 7a, M , W<br>History 7, T , Th<br>Mathematics 8 & 9, M., T., Th, F<br>Spanish 2, M., W., F | Spanish 3, T., Th | Drill, M., T., W. |
| | | | | | Zoölogy 4 and 5, T., Th., F | 2 Geology 7b, M., W | | |

NOTE—The abidoes not contain the schedule of recitations in the Agricultural and Engineering courses.

# GRADUATE COURSES AND DEGREES.

Graduate courses are offered in all departments, when there are students enough to form a class. The following courses are definitely outlined:

1. *Anglo-Saxon and English Philology* . . . . . 2

Ten Brink's Old English Literature (selections); Cook's Sievers' Grammar and one of the following courses of reading with critical and philological study: (a) Alfred's Orosius (Sweet); Judith (Cook); Elene (Kent); or (b) Exodus and Daniel (Hunt); Beowulf (Harrison and Sharpe); For reference: Henry's Comparative Grammar, Brooke's Early English Literature, Bosworth's Anglo-Saxon Dictionary, Skeat's Etymological Dictionary, Mayhew's Synopsis of Old English Phonology, Sweet's Primer of Phonetics, Kluge's Etymological Dictionary, Balg's Glossary of Gothic.

*Miss Pace.*

For graduate students who have completed English 4, 5, and 6, and German 1.

2. *Gothic and Germanic Philology* ..... ..... ..... 3

For students who wish to study English or German historically. Special attention is given to the phonological relations of Gothic to earlier Indo-European languages and to later Germanic languages. Balg's Translation of Braune's Gotische Grammatik; Ulfilas (Heyne or Balg); Douse's Introduction to the Study of Gothic. For reference: Wright's Primer of Gothic, Balg's Glossary, Kluge's Etymological Dictionary, Mayhew's Synopsis, Sweet's History of English Sounds, Brugmann's Comparative Grammar.

*Professor Willis.*

For graduate students who have completed English 4, 5, and 6, and German 1 and 2 or 3.

3. *English Literature* . . . . (*each*) 3

(1) Critical study of the life and works of Scott, Byron, Macaulay, Thackeray, Carlyle, and Tennyson; (2) of Irving, Poe, Hawthorne, Emerson, Longfellow, and Sidney Lanier;

(3) of Shakespeare (complete works); (4) of Chaucer (complete works).

*Miss Pace.*

For graduates who have completed English 2, 3, and 4.

NOTE—At present not more than one of the above graduate courses will be given in any one year to resident students.

4. *German* . . . . . 3

One of the following courses of one year each may be taken at the professor's convenience: (1) Life and Works of Goethe, (2) of Schiller, (3) of Lessing, (4) Old and Middle High German, (5) Gothic and Germanic Philology.

For graduates who have completed German 2, 3, and 4.

5. *French* . . . . . 3

One of the following courses of one year each may be taken at the professor's convenience: (1) Life and Works of Molière, (2) of Corneille and Racine, (3) of Voltaire, (4) of Victor Hugo, (5) Old French.

For graduates who have completed French 2, 3, and 4.

6. *Latin* . . . . . 3

Students who have completed Latin 6 and 7 may take, at the professor's convenience, a graduate course, which for '97-'98 will consist of the Life and Works of Horace.

7. *Greek* . . . . . 3

In '97-'98 graduate students may take, under the direction of the professor, a course in either the Attic Orators or the Drama.

8. *Polyphase Electric Currents* . . . . . 2

Recitations and experimental work. Text-book: Thompson's Polyphase Electric Currents.

*Associate Professor Gladson.*

REQUIREMENTS FOR DEGREES OF C. E., M. E. OR E. E.

These courses of study are intended to give additional preparation to those students who have finished an undergraduate course in Engineering, for some special line of work to which their previous study

has led. The student will have all reasonable liberty in selecting such specialties and will be limited only by certain general requirements. He will be required at the beginning of the year to make up the course which he proposes to follow and to present it to the Faculty, approved by the instructors concerned. If accepted, it will be subject to change only by the Faculty. In general, it is expected that these courses shall comprise one principal subject based on the course already pursued and two secondary subjects, one or both of which should be closely related to the principal. The graduate course should amount to not less than fifteen recitation hours per week as counted in undergraduate work.

The subject of a thesis for any of the above degrees must be submitted to the Faculty for approval before the middle of the second term.

These degrees will also be given to graduates in Civil, Mechanical, and Electrical Engineering who have been in successful practice of their profession for three years and who have submitted a satisfactory thesis on a subject approved by the Faculty.

### REQUIREMENTS FOR THE MASTER'S DEGREE.

Applicants for the degree of M. A. or M. S. must have previously taken the Degree of B. A. or B. S. at this institution or at one having equal requirements. In addition they must take at the University, for a full scholastic year, not less than fifteen hours of recitations and lectures, as determined by the Faculty, and submit a satisfactory thesis.

Bachelors of Arts or of Science of this University may obtain the master's degree without actual resi-

dence, but must complete the work mentioned above and pass satisfactory examinations upon it.

THE DEGREE OF DOCTOR OF PHILOSOPHY (PH. D.)

1. This degree will be conferred for distinguished attainments, as shown by examination and thesis, in any one of the five following subjects: Latin, Greek, German, French, English, or History, together with subordinate attainments in two others of the five; or for distinguished attainments in one principal and two subordinates, of the following sciences: Chemistry, Physics, Geology, Biology, Mathematics, Mechanics, Civil Engineering, or Electricity.

2. This degree shall be open to persons who have received the Degree of B. A. or B. S. at this institution, or at one having equal requirements. Ordinarily it will take three full years' study to complete the work required for this degree, and the last year or a longer time must be spent in resident study at this University.

3. A thesis of 5,000 words or more showing original research shall be required of every applicant, the subject of which shall be announced and passed upon by a committee of the Faculty at least one year before the time set for the final examination, and the thesis itself must be presented to the committee two months before admission to this examination. Twenty-five copies of the approved and printed thesis shall be placed in the University library.

4. All applicants for this degree must, by the end of the first year of the course, be sufficiently

conversant with French and German to read with ease any scientific work written in these languages.

*Charges.*—Graduate students pay $10 for matriculation and registration, $10 tuition (nonresidents $50) at the beginning of each session, and $10 in advance for the final examination. Students who fail to comply with any of these requirements, or who do not each year complete the equivalent of two terms' work in one subject, will be dropped from the rolls. Should such students desire to resume their studies, they must pay for matriculation and registration, as if beginning for the first time. The diploma fee is $5 in advance in each case.

Graduates attending only undergraduate classes pay the same fee as undergraduates.

Nonresident students have such assistance and instruction in their studies as can be conveniently given by correspondence.

# UNIVERSITY EXTENSION.

The purpose of University Extension is to give instruction to persons who are unable to attend the University, and who wish to devote a limited portion of their time to study and culture. It is especially helpful to those who have already begun collegiate courses of study, or have had good high school courses, but persons of ordinary general information may derive much benefit in this way.

The officers of the University hold themselves in readiness to give, within the State, courses of lectures at any conveniently accessible place, where such lectures may be desired.

Printed synopses for each course will be sent in advance for all persons who pledge themselves to study the course, and who register for it with the local manager. With these synopses there will be references to good literature on the subject, and other information. In connection with the lectures there will be further explanation in conferences or quizzes; and all persons who have attended the lectures, have the privilege of being examined upon their work and of having their credits entered on the University records. Persons who have passed satisfactory examinations upon twelve extension courses of six lectures each, will receive a University extension certificate.

For a course of lectures no charge will be made beyond the expenses of the lecturer. This charge may be met by a small fee, paid in advance to the local manager, for each person attending the lectures.

Correspondence on the subject should be addressed to the President of the University.

### SINGLE LECTURES FOR ARKANSAS COMMUNITIES.

Wishing to make the University a direct benefit to the largest possible number of the citizens of Arkansas, the Faculty offer a number of single lectures free to schools in the State, to societies of a religious, scientific, or literary character, or to communities seeking general culture. In all cases the lecturer's expenses must be paid; but no further charge is made by the University, if the lecture is free to the public, or if the admission fee is merely a sum intended to cover the lecturer's expenses.

### AIDS TO PRIVATE STUDY.

The University will do all in its power to aid and stimulate culture in every form; and references, advice, and any other help that may be practicable, will be cheerfully given to citizens who wish to follow courses of reading, either special or general, or to make scientific investigations, or to acquire useful information of any kind.

### TEACHERS' NON-RESIDENT COURSES.

The University offers special opportunities to all teachers in Arkansas. It will admit them to its regular examinations for admission to the Freshman class, or will send the examination questions to county examiners, who will submit them to teachers under the usual rules and return answers to the University. Teachers who pass the required entrance examinations, may then matriculate and enter upon nonresident courses of study under direction of the

University professors; and upon completion of one term's work in any branch, they will be examined upon said work and credited with it, if it comes up to the University standard.

After finishing three-fourths of the course for a bachelor's degree, such teacher-students may graduate by completing the course as regular resident students.

Nonresident study is pursued under disadvantages, and none but energetic and methodical persons, who are willing to practice much self-denial, can succeed in such work. Such courses of study are in many respects less thorough than study under regular instruction at the University. Yet thousands of persons who cannot attend college regularly, are thus educating themselves; and the self-reliant habits of study and investigation acquired by successful work of this kind are of untold value.

Teachers accepting this offer must obtain not less than two credits (two subjects passed for one term, or one subject for two terms), each year; else their names will be dropped from the rolls. Teachers whose vacation occurs during the session of the University, may supplement their nonresident study by attending the regular classes.

# PREPARATORY SCHOOL.

INSTRUCTORS.

B. J. DUNN, Principal, and Instructor in Mathematics.
G. A. COLE, Instructor in Mathematics, Physiology and Book-keeping.
MARY E. WASHINGTON, Instructor in History and Mathematics.
NAOMI J. WILLIAMS, Instructor in Latin and English.
MRS. E. W. COLE, Instructor in History and English.
MARY A. DAVIS, Instructor in English and History.
LINA REED, Instructor in Latin and English.
JESSIE L. CRAVENS, Instructor in Elocution.
MACK MARTIN, Instructor in Foundry and Forging.
GERTRUDE S. CRAWFORD, Instructor in Vocal Music.
ANNA LAIRD, Instructor in Instrumental Music.

The collegiate teachers of the University assist in the Preparatory School whenever needed and it is practicable for them to do so. During the past year the following officers have rendered assistance: W. B. Bentley, Chemistry; G. W. Droke, Mathematics; E. F. Shannon, Latin; A. H. Purdue, Physical Geography; B. N. Wilson, Drawing and Woodworking.

The Preparatory School is intended, first, to prepare students for any of the courses of study taught in the University; second, to furnish to those who cannot take a more extended course, as good a general education as the limited time will permit; third, to prepare teachers for the public grammar schools of the State. To secure these ends, two courses of study are offered.

## REQUIREMENTS FOR ADMISSION.

1. *Arithmetic.*—Students are examined in the whole of Wentworth's Grammar School Arithmetic

and an accurate knowledge of all this is rigidly required. Teachers preparing pupils for admission should require them to learn principles and definitions accurately and to analyze every example capable of analysis, or should give them thorough drill in mental arithmetic.

2. *English Grammar.*—Maxwell's Elementary Grammar.

3. *Geography.*—The whole of some complete manual of Geography, such as Maury's or Frye's.

4. *Reading, Spelling, and Writing.*—Proficiency in these subjects is tested by the examination in Grammar.

NOTE.—Candidates for second year, general course, will be examined in Arithmetic, Algebra to fractional equations, Maxwell's Advanced Grammar, History of the United States, Descriptive Geography, and Latin (Collar and Daniell).

Scientific and engineering students are not examined in Latin, but in Physical Geography and in Bookkeeping instead. Students entering after the session has begun will be examined also in the work passed over by their classes.

## ORDER OF EXAMINATIONS FOR ADMISSION.

Wednesday, September 15, 9 a. m., registration of students; 1-4 p. m., Algebra, Geography.

Thursday, September 16, 9-12 m., Arithmetic; 1-4 p. m., Latin.

Friday, September 17, 9-11 a. m., English Grammar; 11-12 m., English Composition; 1-4 p. m., United States History, General History.

## DETAILED WORK OF THE COURSES.

### FIRST YEAR.

*Mathematics*, 5.—Wentworth's High School Arithmetic, page 120 to the end; Wentworth's Algebra to page 130.

*English*, 4.—Maxwell's Advanced Grammar; Lamb's Tales of Shakespeare; four original essays per term, corrected and copied; Guerber's Myths of Greece and Rome.

*Parallel Reading.*—J. Esten Cooke, Fairfax; Gilmore Simms, Katherine Walton and Marion; Longfellow, Courtship of Miles Standish; Joseph Father Ryan, The Conquered Banner; Albert Pike, The Mocking Bird; lives of the above authors.

*Latin*, 4.—Collar and Daniell's Beginner's Latin.

*History*, 3.—Chambers's United States History and Hempstead's History of Arkansas.

*Physical Geography*, 3.—Tarr's Physical Geography.

*Bookkeeping*, 1.—Messervey's Bookkeeping.

*Woodworking*, 8.—Principles of carpentry and joinery; wood turning; pattern making; cabinet work. Sickel's Exercises in Woodworking.

*Freehand Drawing*, 2.—Practice work; outline drawing from models and machine parts; plans, elevations, sections, dimensions, etc.

SECOND YEAR.

*Mathematics*, 5.—Wentworth's Algebra, pages 130 to 260. Wentworth's Geometry, 4 books.

*English*, 4.—Raub's Rhetoric; five essays per term corrected and copied; Tennyson, The Princess; Shakespeare, Macbeth; Burke, Conciliation with America; De Quincey, Flight of a Tartar Tribe.

*Parallel Reading*.—Goldsmith, The Vicar of Wakefield; Coleridge, Ancient Mariner; Milton, Paradise Lost, Books I. and II.; Pope, Iliad, Books I. and XXII.; The Sir Roger de Coverley Papers in The Spectator; Southey, Life of Nelson; Carlyle, Essay on Burns; Lowell, The Vision of Sir Launfal; Hawthorne, The House of the Seven Gables.

*Latin*, 4.—Four books of Cæsar, or an equivalent; Gildersleeve's Grammar.

*History*, 3.—Barnes's General History.

*Physiology*, 2.—Martin's Human Body, Briefer Course, with experiments.

*Chemistry*, 2.—Williams's Introduction to Chemical Science; lectures and written work.

*Civil Government*, 1.—Macy's Civil Government, and Johnson's History of American Politics.

*Founding*, 4.—Moulding; melting and pouring brass and iron; management of cupola. Ballard's Iron Founding; lectures and practice.

*Forging*, 4.—Management of fire; drawing; welding; riveting; tempering. Lectures and practice.

*Mechanical Drawing*, 2.—Drawings of machine parts; lettering; line shading, etc.

## ENGINEERING AND MECHANIC ARTS COURSE.

| FIRST YEAR. | Hours per Week. | SECOND YEAR. | Hours per Week. |
|---|---|---|---|
| Mathematics | 5 | Mathematics | 5 |
| English | 4 | English | 4 |
| History | 3 | History | 3 |
| Bookkeeping | 1 | Civil Government | 1 |
| Drawing | 1 | Physiology | 2 |
| Woodworking | 2 | Drawing | 1 |
| | | Founding | 1 |
| | | Forging | 1 |

NOTE.—Candidates for admission to the Freshman Class in Mechanic Arts and Engineering will be examined in all the subjects required for admission to the University, except Latin.

## GENERAL COURSE.

This course prepares students for the courses in Liberal Arts or in Science or for the Normal Course. It gives a limited general education to students who cannot take a collegiate education.

| FIRST YEAR. | Hours per Week. | SECOND YEAR. | Hours per Week. |
|---|---|---|---|
| Mathematics | 5 | English | 4 |
| English | 4 | History | 3 |
| History | 3 | Physiology | 2 |
| Latin | 4 | Latin | 4 |
| | | Mathematics | 5 |

NOTE.—If a student is preparing to enter the scientific courses he may substitute Bookkeeping and Physical Geography for first Latin, and Chemistry and Civil Government for second Latin.

Special courses of study are not allowed in the Preparatory School, but students known to be in poor health or having physical defects which interfere with their studies, are sometimes permitted by the Faculty to defer one or more subjects of study and extend the course over a longer period.

Students who have at any time been enrolled in the Preparatory School, must complete all the studies in one of its courses before dropping preparatory work; and studies in lower classes have precedence over higher ones. A student in the Preparatory School is a member of the highest class with which he has as many as nine recitations per week.

# THE MEDICAL SCHOOL.

LITTLE ROCK, ARK.

## FACULTY.

P. O. HOOPER, M. D.,
Emeritus Professor of Practice of Medicine.

JAS. A. DIBRELL, M. D.,
Professor of General Descriptive and Surgical Anatomy and President of Faculty.

EDWIN BENTLEY, M. D.,
Professor of Principles and Practice of Surgery.

JAS. H. SOUTHALL, M. D.,
Professor of Practice of Medicine.

ROSCOE G. JENNINGS, M. D.,
Professor of Clinical Surgery and Dermatology.

C. WATKINS, M. D.,
Professor of Physical Diagnosis and Clinical Medicine.

JAMES H. LENOW, M. D.,
Professor of Diseases of Genito-Urinary Organs.

L. P. GIBSON, M. D.,
Demonstrator of Anatomy and Adjunct Professor of Anatomy.

LOUIS R. STARK, M. D.,
Professor of Gynecology.

E. R. DIBRELL, M. D.,
Professor of Physiology.

FRANK VINSONHALER, M. D.,
Professor of Ophthalmology and Otology.

T. N. ROBINSON,
Professor of Medical Chemistry and Toxicology.

W. H. MILLER, M. D.,
Professor of Obstetrics and Prosector of Anatomy.

F. L. FRENCH, M. D.,
Adjunct Professor of Materia Medica, Therapeutics, Hygiene and Botany.

All communications should be addressed to
E. R. DIBRELL, M. D.,
*Secretary of Faculty*,
Little Rock, Ark.

# NINETEENTH ANNUAL ANNOUNCEMENT.

OF THE

## ARKANSAS INDUSTRIAL UNIVERSITY MEDICAL SCHOOL.

*The Regular Winter Course* of lectures will begin on Monday, November 3, 1897, and continue until April 31, 1898.

Lectures will be delivered daily during the six days of each week.

The matriculation book will be opened from and after September 1 to students desiring to matriculate early and secure choice of seats.

*The Preliminary Fall Course*, which is given gratis to all students, will begin on Monday, October 5, 1897, and continue to Monday, November 2, 1897, when the winter session opens. This course is in fact a part of the regular course, and is just as important. Students should therefore be on hand promptly October 5.

In making this annual announcement the Faculty feel great satisfaction in referring to the continued success and prosperity of the Medical Department. The cordial indorsement of the Arkansas Medical Society and the generous influence of the medical profession throughout the State, is highly appreciated and encourages the Faculty to continue the arduous labors they have so long and zealously maintained.

### ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

At the meeting of the Association of American Medical Colleges at Baltimore, in May, 1895, it was

determined to extend the course of study to four years, and it was resolved with great unanimity to require of all new matriculates, beginning with the school year of 1895-96, as one of the requirements of graduation, that they should attend four courses of lectures of not less than six months each. The Medical Department of the Arkansas Industrial University, being a member of the College Association, adopted and will carry out these requirements.

MATRICULATION.

As required by the rules and regulations of the "Association of American Medical Colleges," students on matriculating are required to present credentials showing that they are matriculates or graduates of recognized colleges of literature, science or arts, of high schools, academies, normal schools, or equivalent schools, or that they have teachers' certificates.

Graduates and matriculates in Medicine, Dentistry or Pharmacy, on presenting credentials showing such, are exempt from the entrance examination.

To avoid delay, students entitled to matriculate *without* examination are requested to bring their certificates with them and present them on arrival at the college.

Students not entitled to exemption, as hereinbefore provided, are required to pass an entrance examination, with the following requirements: the writing of an English composition of not less than 200 words; the translation of easy Latin prose; a knowledge of the elements of Arithmetic or Algebra, and of elementary Physics.

## CURRICULUM.

*First Year.* — Anatomy, Practical Anatomy, Physiology, Chemistry, Physics, Histology and Medical Ethics.

*Second Year.* — Anatomy, Practical Anatomy, Physiology, Chemistry, Materia Medica, Pathology, Obstetrics.

*Third Year.*—Materia Medica and Therapeutics, Toxicology, Obstetrics and Diseases of Children, Physical Diagnosis, Diseases of the Eye and Ear, Practice of Medicine, Surgery.

*Fourth Year.*—Review of all branches, Practice of Medicine, Surgery, Dermatology, Gynecology, Bacteriology, Urinology, Venerial Diseases, Diseases of the Nervous System, Medical Jurisprudence.

## LOCATION.

The city of Little Rock is conveniently situated in the center of the State, and railroads enter from every direction, making it easily accessible.

It has a population of more than 40,000, and has always been classed as one of the most healthful cities west of the Mississippi River. Few places can boast of better public schools, colleges and universities than Little Rock. All the eleemosynary institutions of the State are located here. These are the School for the Blind, Deaf Mute Institute and the Insane Asylum.

## MEDICAL SCHOOL BUILDING.

The new structure is an imposing edifice, three stories in height, constructed of brick and admirably arranged for the convenience of both students and instructors.

It has a large lecture hall, a fine amphitheater with chairs, a library, a reading room, a museum, several dissecting rooms, all well lighted and ventilated. In fact, it is designed to be a modern and model medical college building. It is situated on Second and Sherman streets.

HOSPITALS.

The Logan H. Roots Memorial Hospital.—By the munificence of the late Col. Logan H. Roots and the benevolence of his widow the city of Little Rock is to have an elegant public hospital.

The commodious building is now completed.

The Medical Department of the University is fortunate in having this hospital situated on lots adjoining their own building, thus promising greatly increased clinical facilities.

The Little Rock Infirmary, designed solely for the treatment of acute diseases, has a capacity of fifty beds. This hospital is splendidly equipped and furnished with modern conveniences and improvements, is in the very best sanitary condition, and under the supervision and management of trained nurses, Sisters of Charity.

The Pulaski County Hospital, erected at a cost of some $30,000, is a handsome brick structure, well arranged, complete in all its equipments and has a capacity of 200 beds.

Accidents from railways, marine patients, and the sick and injured from the city, county and State, find in these hospitals shelter, food, raiment and that

Christian attention so cheering and comforting in sickness and distress.

The inmates of these different institutions embrace all classes and conditions of people—white, colored, male, female, adults and children—and with them are found almost every form of malady except quarantinable diseases, which are otherwise provided for.

"THE ISAAC FOLSOM CLINIC."

This clinic is thus designated in honor of the personal life of Dr. Folsom and the friendship and interest this honorable physician and philanthropist entertained for the Medical Department. He legally executed an instrument of writing endowing this clinic with $20,000, thus perpetuating the *Isaac Folsom Clinic* as a part of this institution.

Every student of this department is required to attend this clinic, and each candidate for graduation must pass an examination on the clinical instruction therein received, and this fact will be specially mentioned on the face of his diploma.

The daily instruction in this clinic is thoroughly practical, and is attended by a large number of outdoor patients from the city and surrounding country. It embraces a wide range of diseases and injuries.

METHODS OF TEACHING.

Instruction will be given by didactic and clinical lectures, practical work in the dissecting room, chemical and physiological laboratories, and by daily quizzes upon the subject of preceding lectures.

When the subject will admit of it, each branch will be so illustrated by means of diagrams, charts,

models and instruments, as to address the understanding of the student through the medium of sight as well as hearing.

### EXPENSES OF LIVING, ETC.

The expenses of living in the city of Little Rock will, of course, vary according to the views and habits of students. Good board, at the present time, including lodging, fuel and lights, may be had at a convenient distance from the College, at from $4 to $6 per week, and from $13 to $18 per month.

Students on their arrival are requested to visit the University building, corner Second and Sherman streets, where a list of parties desiring to board medical students will be found.

Persons desiring further information are requested to address the Secretary of the Faculty.

### TERMS.

The fee for a full course of lectures will be:

| | |
|---|---|
| General Ticket | $50 00 |
| Matriculation Ticket (paid but once) | 5.00 |
| Demonstrator's Ticket (for each course) | 5.00 |
| Hospital Ticket (each course) | 3.00 |
| Graduation Fee | 25 00 |

No variation is made, under any circumstance, from the established fees of the College, they having been placed originally at the very lowest figure commensurate with the interests of both student and College.

For more specific information and catalogue apply to

E. R. DIBRELL, M. D.,
*Secretary of Medical Faculty*,
Little Rock, Ark.

NOTE.—Alumni are requested to inform the Secretary of their present post office address, and of any change of location, in order that they may have the annual catalogue forwarded them regularly.

# LAW SCHOOL.

LITTLE ROCK, ARK.

JOHN L. BUCHANAN, A. M., LL. D.,
President of the University.

F. M. GOAR, LL. B.,
Dean of the Law Department.

The Law Course embraces two years divided into four terms. Fall term will commence October 1, and close January 31. Spring term will commence February 1, and close June 1.

COURSE OF INSTRUCTION.

The design of this school is to afford such training in the fundamental principles of the law, as will constitute the best preparation for the practice of the profession anywhere in the United States, and especially in the State of Arkansas. With this view the course of study, which is intended to occupy the student two years, will comprise the following subjects:

JUNIOR YEAR.

*First Term.*—Contracts, Lawson; Agency, Lectures; Partnership, Lectures; Commercial Paper, Tiedeman; Evidence, Greenleaf, Vol. 1.

NOTE.—The course of the first term of the Junior Year is specially adapted to those who contemplate a commercial life, or life other than the profession of law. It is a heavier course than commercial colleges can afford to give, but a knowledge of the subjects of the course is indispensable to a successful business career. Terms for this course, $25.

*Second Term.*—Criminal Law, Harris; Pleading, Stephen; Code Pleadings, Bliss; Judgments, Lectures; Domestic Relations, Lectures; Moot Courts.

SENIOR YEAR.

*First Term.* — Law of Private Corporations, Cook; Municipal Corporations, Lectures; Bailments, Schouler; Insurance, Lectures; Torts, Cooley; Moot Courts.

*Second Term.* — Real Property, Tiedeman; Equity Jurisprudence, Bispham; Constitutional Limitations, Cooley; Conflict of Laws, Lectures; Fraud and Fraudulent Conveyances, Lectures; Leading Cases, Moot Courts.

Students will be matriculated at any time. Books can be purchased here. We do not think it prudent for students to devote less than two years to the foregoing course. "He who is not a good lawyer when he comes to the bar, will seldom be one afterwards," is a saying full of truth.

Thought as well as reading is necessary to the proper understanding of our system of jurisprudence. No man can hope to be a good lawyer by the cramming process. While students are advised not to attempt to complete the full course in a single year, yet if one chooses to make the effort, and has acquired sufficient knowledge of the law from previous reading, he will be admitted to the graduating examination, and if he attains the standard required, he is entitled to his degree. Every candidate for the honor degrees will be required to attend the full term of two years.

EXPENSES.

Tuition, $50 per session, payable $10 in advance and $5 per month thereafter during the session. Books will cost from $20 to $30 per year. Board

from $15 to $20 per month; by the club system, where the students do their own work, from $6 to $10 per month.

Cheap lodgings may be obtained by consulting the Dean before the opening of the session, and the cost of living need not be greater in Little Rock than elsewhere in the State.

Many reasons may be given why young men, contemplating the practice of law in Arkansas should patronize their own law school: 1. In the application of the elementary principles of law in the practice, the reference books must be in the main to the laws of the State where the law school is located, as found in the Constitution, Statutes, and Supreme Court Reports of the State: 2. Emulation and class organization will do much for the law student.

The old way of serving a term in a private law office of a senior at the bar is fast yielding to more modern and better methods.

"The time has gone by when an eminent lawyer in full practice can take a class of students into his office and become their teacher. Once that was practicable, but now it is not. The consequence is that law schools are now a necessity."—*Chief Justice Waite.*

The law department at Little Rock is exceedingly fortunate in its surroundings. Students have free access to the Supreme Court Library of about 20,000 volumes. Every court known to our system of jurisprudence, both State and Federal, is held in Little Rock during each session of the school, except two (Supreme Court of the United States and Court of Claims at Washington), besides a large and emi-

nent bar to draw our lecturers from, which has manifested great interest in the school from the first.

Again, the associations and friendships formed with representative young men throughout the State are invaluable in many respects to the practitioner.

## EXAMINATIONS.

Written examinations are held each term in the presence of a member of the Faculty upon questions handed the student at the time, and on the merit of their papers students will be graded carefully. Diplomas and degrees will be awarded by the Board of Trustees upon the recommendation of the Faculty.

Those of the Senior Class who attain a sufficiently high grade on their examinations will be entitled to the degree of Bachelor of Laws.

Every candidate for this degree is required to file with the Dean an essay or thesis upon some topic connected with his studies.

## MOOT COURTS.

Moot courts are held from time to time during the term, in which students discuss cases previously assigned them for that purpose. These courts are presided over by the professor, who, at the conclusion, reviews the arguments and gives his decision upon the points involved. The effort here is to make not merely theoretical but practical lawyers; not to teach principles merely, but how to apply them. To this end, the moot court is made the forum for the discussion of such practical questions as most frequently arise in a professional career at the bar; and the attention of the students is directed not less to the application of the points discussed in actual cases,

than to the elucidation of the legal questions. An opportunity is afforded all the Senior students to participate in this court, and to all Junior students of the second term.

Moot Courts are conducted on the theory that certain facts are true, and that the only subject open to discussion is the rule of law to be applied to them. The student, having obtained a statement of facts, is required to prepare pleadings, and draw up a brief in which the rules of law are stated under appropriate divisions and sustained by authorities which he proposes to rely upon in his oral argument.

The pleadings are submitted to the professor. He calls the student's attention to such errors as may exist, and gives such other practical information as he may deem advisable.

### GOAR LYCEUM.

This society is composed of the students of this department, and meets regularly every Thursday night during the session.

All questions of interest to the members are discussed, and preference is shown for those legal in their nature.

This affords to the student that invaluable aid of learning "to think, whilst on his feet," besides giving him an easy manner of address in public speaking.

### PROFESSIONAL ETHICS.

While endeavoring to impart legal knowledge, the fact will not be lost sight of that a high moral standing is a most important requisite to a successfu

and honorable career, and no pains will be spared in impressing this fact upon students and inculcating a high tone of professional ethics and action.

For further information address

F. M. GOAR, *Dean*,
Little Rock, Ark.

# THE BRANCH NORMAL COLLEGE.

## GENERAL STATEMENT.

The Branch Normal College is a department of the Arkansas Industrial University, established pursuant to an act of the General Assembly of the State of Arkansas, approved April 25, 1873, and has been in operation since September 27, 1875. Its primary object is the training of teachers for efficient service in the colored public schools of the State—the law referred to having been enacted with special reference to the "convenience of the poorer classes." For the purpose of carrying out the intent of the law, tuition is made free to all appointees; the only requirements for admission being suitable age and qualification, and appointment from one of the county judges, and the payment of the entrance fee of $5. Other students pay, in addition to the above, $1 per month in advance.

## LOCATION, ETC.

The school property consists of a beautiful tract of 20 acres of ground, in the suburbs of Pine Bluff, Jefferson County, Ark., and a few rods from the junction of the Missouri Pacific and the St. Louis and Southwestern railroads. The school building, completed in 1881, and occupied January 30, 1882, is one of the handsomest educational edifices in the State, as well as one of the best, being warm and comfortable, well lighted and ventilated. It contains one large assembly room, four recitation rooms, and cloak room for males and females. The building is

of brick, with slate roof and trimmings of Alabama granite, and cost, with improvements and furniture, $12,000. The furniture and other equipments are of the best modern style.

The dormitory, a handsome brick building of seventeen rooms, and the Mechanical Department building, are upon the same grounds.

The Normal course of study is intended to be a full equivalent to a regular college course up to and including the Sophomore year; the only difference being the substitution of Pedagogy for Greek and the higher mathematical branches. The college course adds to this the usual studies of the last two years. Twelve classes have graduated from the institution, and the members are now occupying prominent positions in life. The number of students for the year 1896-97 was nearly 200.

## THE LIBRARY.

The library consists of over 3,500 volumes, embracing many valuable reference books, such as Appleton's Cyclopædia, Lippincott's Gazetteer, etc. It also has a fine collection of the works of standard authors—Shakespeare, Milton, Irving, Cooper, Dickens, Longfellow, Carlyle, Tennyson. The library of the principal, embracing many valuable text and reference books, including the Encyclopædia Britannica, is also accessible to students. A small collection of minerals, each of which is a typical specimen, and none of which are duplicates, has been procured. During the past year a valuable supply of apparatus has been added to the educational resources of the institution, consisting of an air pump, electrical ma-

chine, standard barometer, batteries, French microscope, spectroscope, sets of weights and measures, common and metric, etc. The outfit of the Mechanical Department is not surpassed, if equalled in quality, by any in the State.

The Reading Room has been fitted up in elegant style and supplied with quite a number of valuable newspapers and periodicals, many of which are furnished by their publishers. Among those on file are the *Freeman*, Indianapolis; *Western Appeal*, Minneapolis; *Gazette*, Huntsville; *The Gazette*, Little Rock; *Globe-Democrat* and *Republic*, St. Louis; *The Tyler*, Detroit, Mich.; *Popular Educator*, Boston; *Lippincott's Educational Quarterly*, *American Student*, New York; *Weekly Echo*, Pine Bluff; *National Baptist*, Philadelphia; *Southern Review*, Helena; *American Machinist*, *Scientific American*, *Popular Educator*, *Nation*, the scientific publications of the State of Arkansas and of the United States, etc.

## DORMITORY FOR GIRLS AND BOARDING HOUSE.

The dormitory for female students is under the supervision of the principal and his wife. It is a handsome brick structure, sufficient for the accommodation of thirty or forty students. Board bills are payable monthly in advance, and no deduction is made for loss of time less than one week. Girls staying in the dormitory are required to keep their own rooms and the halls clean, and to assist in turn in the dining room and kitchen. They are expected to furnish their own bed linen, and are held responsible for all damage to furniture in their rooms. They are not to visit each other's rooms, except by invitation

from the occupant, and two are expected to occupy one room. They are not allowed to change rooms, nor to visit in town except by permission. The charge for board, fuel and light thus far has been $8 per month, in advance, and, if possible, that price will be continued.

MECHANICAL DEPARTMENT.

The operations of this department are under the superintendence of Prof. George M. Peek, Superintendent of Mechanic Arts at Fayetteville, assisted by Prof. W. S. Harris, a graduate of the Miller Manual Labor School of Virginia. The equipment is as follows:

The shop building was completed in February, 1892. It is of brick and covers a plat of ground 70x70, comprising a wood shop 35x35, a foundry 25x25, a blacksmith shop 25x25 and a machine shop 35x25; a boiler room 20x25 and a court 35x20 occupy the remaining space.

*Wood Shop.*—The equipment already secured includes twelve benches with complete sets of carpenters' tools, a double-circular sawing machine, a scroll saw, a buzz planer, and six wood turning lathes.

*Foundry.*—A Colliau cupola capable of melting 1½ tons of iron per hour is in position, and the remainder of the outfit will be added shortly. It includes ladles, moulders' tools, flasks, core oven, rumble, etc.

*Forge Shop.*—Twelve Buffalo forges are in position, the blast being supplied by a blower, and the smoke drawn off by a large exhaust fan. Besides the usual outfit of anvils, hammers, tongs, etc., there is a Buffalo punch shear and bar cutter capable of

cutting off 1-inch bar iron ½x3-inch strap iron, or of punching a ⅜-inch hole in ⅜-inch iron.

*Machine Shop.*—Among the tools already ordered and partly in place, are a 15-inch crank shaper, 24x24x6 feet planer, 20-inch drill press, 15-inch by 5 feet turret lathe, 18x6-inch engine lathe, 14-inch by 6 feet engine lathe, 12-inch by 50 feet hand lathe, universal milling machine, cutter and reamer grinder, twist drill grinder, power grindstone, dynamo, etc.

*Heating and Power Plant.*—Two vertical engines of 12-horse power each are in position, also two 30-horse tubular boilers. The piping for feed water is so arranged that the water passes from either pump or injector through a feed water heater to the boilers; and the exhaust piping is so arranged that the exhaust steam from the engines can be used either to heat the feed water or to heat the shops.

*Water Supply.*—In the court of the shop building a 4-inch Cook tubular well has been put down, which will furnish 1,000 gallons of water per hour. A Cook pump delivers the water to a tank 30 feet above ground, holding 8,000 gallons.

*Sanitary Provisions.*—The shops are thoroughly well lighted, ventilated, heated and drained. Sewer connection is made to all buildings, and the abundant water supply is used to insure cleanliness in wash room and water closet.

The courses in the department are as follows, viz:

(*a*) A course in general shop work, extending over three years, followed by a fourth year's work in one of the shops selected by the student. The design

is to enable a young man to choose his trade intelligently and to acquire a sound basis for it.

(*b*) A three year's course in general shop work followed by a fourth year's work in the management of boilers, engines and heating systems. This course is intended to train young men for the practical work of foremen or engineers.

(*c*) A course in general shop work extending over three years, together with class-room work in the theory and practice of teaching, followed by a fourth year's work in handling classes in the shops and in laying out series of practical exercises.

For fuller information respecting this and other departments, reference is made to the catalogue of Branch Normal College.

## GENERAL EXERCISES.

In addition to the regular class exercises prescribed in the course of study, there are regular lessons in vocal music, which are open to all the students. The general exercises also include a review of a Sabbath school lesson, review of the events of the week, calisthenics, music and drawing. Music upon instruments—the organ, piano, flute, guitar, etc.—is extra, but very reasonable in price. There are two literary societies, the Junior and Senior, which hold weekly meetings and afford excellent opportunities for practice in oratory, debate and composition. It is required that every student shall become a member and attend the meetings of one of the societies.

The length of the vacation allows the advanced students an opportunity to engage in teaching, and a large proportion of their number have done so

during the last five years. In nearly all cases they have given satisfaction and conduct their schools with a fair degree of success. The Normal students have also assisted in the work of the institution itself as a part of their training.

It will be a great advantage to the institution if the various county judges will take a special interest in seeing that their counties are represented. The proper blanks for making appointments will be furnished, together with all necessary information, on application to the principal.

J. C. CORBIN, A. M.,
Pine Bluff, Ark.